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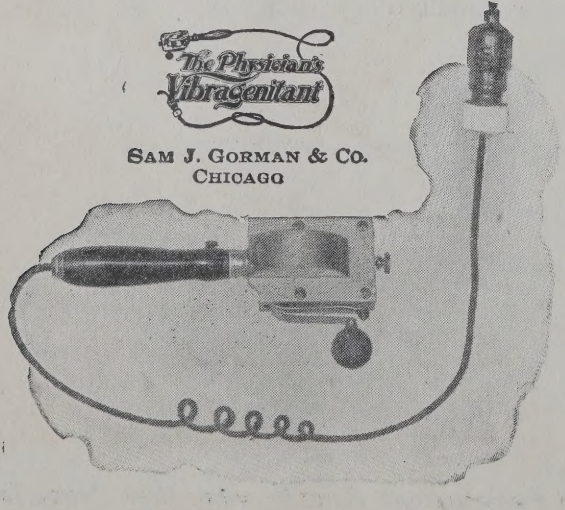

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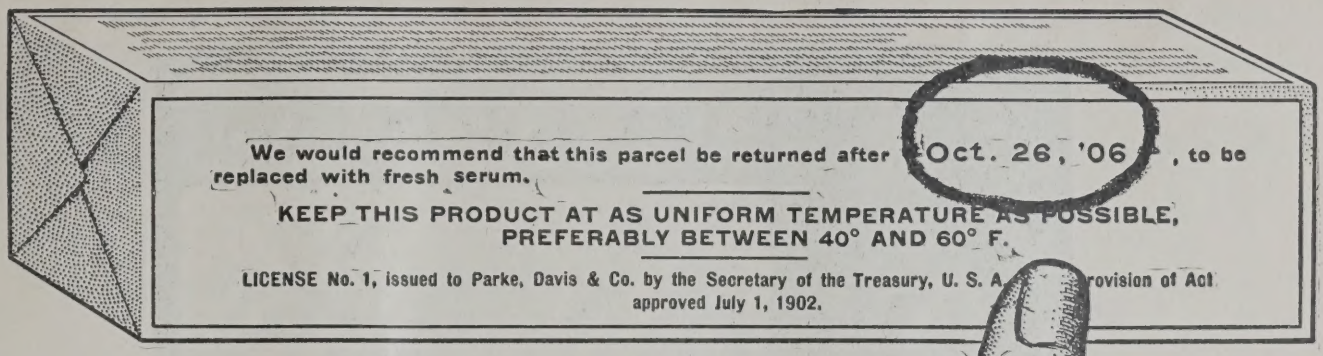
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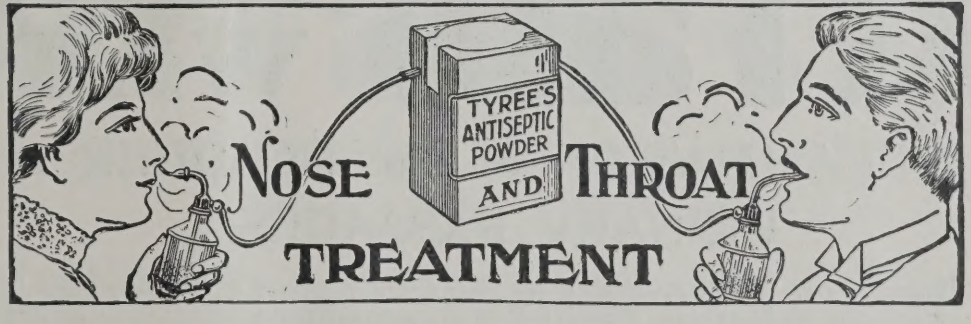

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ORIGINAL ARTICLES

THE X-RAY AS A THERAPEUTIC MEASURE.

BY GEO. R. WILSON, M.D.

PART I.

FINSEN was the most important worker in placing upon a scientific basis the therapeutic action of light; a native of Iceland, he received his preliminary education in the Faroe Islands, completing it at the University of Copenhagen, graduating in 1890. His health gave way at this time, and his arduous scientific labors were carried on while he was suffering from a most painful and incurable disease. His first published work on the Effects of Light on the Skin appearing in 1893, attracted widespread attention; and in 1896, as a result of his investigations, Finsen's Medical Light Institute was established in Copenhagen, and in 1899 he published the first of his series of monographs, in which he recorded his researches. It is a serious loss that Finsen has been lost to medicine at such an early age; but fortunately he made singularly clear, detailed, and accurate reports of his observations, so that an exhaustive study of light in its possibilities is helped by the data he left.

In light a remedy of no mean order exists, which in the near future will occupy a most exalted position in therapeutics. Rosenberg reports 27 cases confirming this statement, showing that blue, violet and ultraviolet rays are almost a specific against pain, such as lumbago, torticollis, pleurodynia, acute and chronic neuritis; the ultraviolet light rays being obtained from an iron carbon arc of high amperage. The bactericidal powers of the chemical light rays are seen in inflammatory conditions of the skin of parasitic origin, while in acne and furunculosis, the curative effect is both prompt and certain. In gonorrheal peritonitis and catarrhal inflammation of the deep urethra and adjacent structures the results have been encouraging, while in rheumatic arthritis the rays failed to be of signal benefit.

Gilchrist suggests the advantage of using the X-rays in the treatment as well as for the diagnosis of fractures; the apparatus necessary for this method of managing fractures being a complete X-ray outfit, of either coil or static machine, with the usual accessories. An ordinary wooden top table can be used, or one made by laying two pieces of pine lumber, 6 feet long by 12 inches wide and 1 inch thick on a firm support about 18 inches high. The tube is placed on a stand underneath the table, from 4 to 8 inches from the under surface of the board. To prevent burning, the table can be covered with a rubber blanket. By means of the fluoroscope placed over the injured part the conditions of the fracture can be seen constantly, as can also every movement of the fracture extremities during their adjustment, avoiding the necessity of giving an anesthetic for diagnostic purposes, saving the patient many painful manipulations, and the tissues from bruising and laceration by unnecessary handling, in other words, setting the fracture by the use of the fluoroscope.

The complete cure of an extensive multiple vascular nevus on the face of a young girl was accomplished by Bordier; applying a compressor to cover the region with pressure sufficient to blanch the skin the sound skin between the patches being protected by tin foil, the current of 16 to 18 amperes was turned into the arc light for an hour, the sitting being repeated daily. The exposed parts then looked as if they had been burned, and the applications were suspended until the burned tissues recovered, requiring about ten days. The daily applications were then resumed, four of these series being required; the entire nevus was finally cast off as an eschar leaving sound skin in its place underneath.

Williams has discovered that the rays from radium salts, unlike the X-rays, are not useful in diagnosis either by radiographs or fluoroscopic examination; but the beta-rays from radium salts will heal some cases of new growths that are not cured by the X-rays, and act more promptly, though over a more limited surface. Radium salts at an activity of 8,000 or considerably more, are not strong enough to be efficient, and pure radium salts which have a radioactivity of about 1,000,000 are not too strong for the work to be done. Radium rays, unlike the X-rays, are uniform, and great care must be taken to avoid burning the tissues.

Vose and Howe, in studying a series of 120 cases of cancer with reference to the effect produced by the X-ray on cancer, found that a uniform technique was necessary to be certain of the uniformity of the results. The first effect on ulcerated surfaces was that of stimulation, shown by the formation of granulations, but under continued exposure the epithelial edge is destroyed and healing is retarded, and it is difficult to decide at what point the beneficial influence ceases. Some contracted and painful scars have softened and have become much more pliable with diminution of pain, although this is not an invariable effect, nor can any histologic change be shown. Eighteen painful cases were treated; of these, nine patients were temporarily or permanently benefited, in some the benefit amounting to almost total relief; five others received a similar benefit when the brush discharge from a high frequency machine was added, but the other four cases showed a distinct increase of pain, and two patients who had no pain at the start developed pain later, while two patients complained bitterly of pain coming on after exposure, and lasting from a day or two. Cutaneous cancer treated by the X-ray undergoes degeneration not peculiar to this form of treatment, or distinguishable histologically from degeneration from other causes; the vascular changes being limited to an endarteritis; new formation of blood vessels occurs if healing takes place, as in the process of repair elsewhere; and there is an increase of elastic tissue. The only cure of cancer by the X-ray is by destruction and exfoliation, which once limits its value to superficial cases; this destructive process being slow and acting superficially. Many essentially chronic superficial epidermoid cancers may be removed permanently by surgical procedure, that course

seems preferable to the somewhat tedious treatment by the X-ray, and as they both may fail, an extensive surgical operation, if necessary, may be undertaken more promptly, as it is non-selective in its action, the X-ray cannot be used strongly enough to affect destruction of anything but the shallowest tumors without serious injury to the overlying and surrounding tissue, or, in other words, without producing a burn which may never heal.

As to the influence of photodynamic substances on the action of X-rays, Kothe grows enthusiastic over the increased action of the X-ray after the tissues have been previously injected with a one per cent. solution of eosin, an hour before exposure. He claims that the injection of eosin enables the course of X-ray treatment to be shortened, shortening the exposure, while the reaction occurs sooner, and is more intense than without the eosin. The eosin injections also restrict the energetic reaction to a circumscribed area, while the uninjected surrounding sound tissue scarcely feels the action of the X-rays. The first suggestion of the use of X-rays in leukemia or in pseudoleukemia, was made by Dr. A. J. Ochsner, and the first cases of this sort reported were three cases which Pusey reported three years ago, two of which were demonstrated. One of these cases was a splenic leukemia, which had inadequate treatment, and was reported as a failure. The other two cases were cases of pseudoleukemia which he showed symptomatically cured. The first of these patients, a child four years old, had a recurrence of the disease in the neck seven months later, which was removed by operation, and the child died within a few days of inspiration penumonia. In the second case, in which there had been very large glands, the patient is living and at his work at the present time. For two years after he was presented to the society he was well, he thought, and had no further treatment. A year ago he developed large mediastinal glands with pressure symptoms, but, much to surprise, recovered under X-ray exposures given for a month. Recently he appeared again with some glands the size of an olive in the neck and groins which have just disappeared under X-ray exposures. Except for these two months he has been in his usual health and vigor for three years. He has had several cases of pseudoleukemia which have cleared up under X-rays, but no other case that he has been able to follow so closely as this one. His experience in removing the enlarged glands in true leukemia has been as favorable as in pseudoleukemia, but in most of the cases the improvement in the blood has not kept pace with the decrease in the glands; while the patients improved, the results have not been radical.

As to the use of the X-rays in leukemia, Meyer and Eisenreich report two cases of myeloid leukemia thus treated which differ in several points from other cases that have been published. In one patient, a machinist 31 years old, the blood findings altered completely under the influence of the rays, and notable leucocytosis followed, with most cells predominating, and at the end of four months the leucocytes had fallen from 165,000 to 6,100, but then rose again to about 22,000, and later to 35,000. The general health was very much improved, the working capacity being restored, the patients gaining in weight, and the proportion of red corpuscles and of hemoglobin approximating normal. The blood findings altered so materially under the influence of the rays that no one would have suspected leukemia from the blood picture, and the spleen returned to normal size in the first case, but remained enlarged in the second case as the leukemia was of longer standing, and the symptoms more serious. Following stoppage of the treatment the blood findings have displayed a tendency to return to the leukemic picture, so that the hope of permanently curing leukemia in this way is not so bright. They found that exposure of the liver and spleen in healthy subjects failed to show any action of the rays on the autolytic fermentative processes. Wendel has collected and reported from medical literature 38 cases of leukemia treated with the X-rays, and adds another of his own, finding that more than 90 per cent. were favorably influenced. In two instances no appreciable benefit was observed, and in two the disease rapidly progressed notwithstanding the treatment; in another case the patient succumbed to an intercurrent disease, and in another to a rapid recurrence.

In two others death ensued, although the patients seemed to improve at first. He finds that no case of acute leukemia has been treated as yet, and the myeloid variety seems to afford a better prognosis than the lymphoid, although cases of the latter have improved.

Schieffer is still more enthusiastic, for he has treated five cases, and he pronounces three of them cured. One patient abandoned treatment after being materially improved by a few exposures, while the fifth patient, a man of 46, almost moribund, was benefited at first, but the symptoms recurred after a few weeks, and the patient soon died in collapse. The earlier in the disease the treatment is instituted the better the results attained; the spleen alone being exposed in Schieffer's cases, and when treatment had to be discontinued on account of dermatitis the improvement still continued to improve. Schieffer ranks Roentgen treatment of leukemia with the digitalis treatment of heart affections, for there are few measures, he claims, which produce such unmistakably favorable effects. In treatment of myeloid leukemia, the spleen in the case reported by Schleif extended a hand's-breadth to the right of the linea alba, reaching to the region of the symphysis, it was firm to the touch but not painful. The changes in metabolism and in the composition of the blood are tabulated by Schleif, and they show great improvement under the X-ray treatment. The exposures aggregated 800 minutes in the course of four months, about 650 minutes being devoted to the spleen and the rest to the bone marrow; at the end of this period the red corpuscles numbered 3,600,000, the leucocytes 28,600, and the hemoglobin 80 per cent.; the patient felt and looked extremely improved. The treatment was supplemented by the use of arsenic. The treatment was suspended at the end of four months on account of diarrhea and ascites.

Tousey reports a case of uterine carcinoma which was remarkably benefited by X-ray treatment; here the treatment consisted in allowing the X-ray to shine through the uncovered abdominal wall, and also through Nott's speculum, and in the application of high frequency currents; the current used being the 110-volt direct current, with a liquid interrupter of the Simon's type. An 8-inch coil, a 40-cm. tube, and a rheostat which cut the currents down to about 4½ amperes were also used. The vacuum in the tube was adjusted for each treatment to correspond with an internal resistance of about two and a half inches, and a penetration of two or three layers in Tousey's radiometer. The distance was nine inches from the anode of the tube to the

nearest surface of the patient; time of exposure, about five minutes over the abdomen and five minutes in the vagina. The high frequency currents were taken directly from one pole of the X-ray coil, by means of an insulated cord passing from the coil to an insulated handle by which the operator held a glass vacuum electrode which was placed in contact with the skin. The patient's life was prolonged for a year, and death resulted from a serious gastric disturbance which was not of a cancerous character. He found in a second case very similar results.

Sunlight reflected into the throat as a means of curing laryngeal tuberculosis is unreliable for systematic treatment. Sorgo believes that the application of artificial light is feasible, for as the laryngeal tissues are loose and succulent, and as they have never been accustomed to the action of light, they are affected by even the parallel rays; Sorgo believes that it will not be necessary to focus the rays. Thus the patient can apply this light treatment himself without the necessity for complicated apparatus, a current of 60 milliamperes being ample. But as yet Sorgo has had no opportunities for practical experience with artificial light; and he believes that adrenalin is a valuable aid in treatment. Edematous conditions seem to be a contraindication to this light treatment.

Ewart was one of the first to speak of the similarity of the emanations from radium and the X-rays; but the physicial laws governing the X-ray should be understood to use them efficiently; the vacuum tube changes in resistance, becoming more rarefied in proportion to the discharge which passes through it. The rays arise at the anticathode, and that point should be taken in estimating their relative intensity, and the exposure should be inversely as the square of the distance. The intensity of the ray in the reverse aspect of the tube will depend (1) upon the thickness of the photographic plate, and (2) upon the penetrating power of the ray. An apparatus for therapeutical purposes must maintain absolute constancy, as nearly as possible. Accumulators kept well charged are more constant than the current taken from the main by means of a transformer, and to ensure greater constancy the tube must not be allowed to get hot; this will be a means of prolonging its life. The screen and the operator's hand should not be used to judge of the penetrating power of the rays on account of the lack of an absolute standard, as well as the danger of such a procedure. The proper interval between the terminals determined by experiment must be maintained, only the duration and the interval of exposure must be varied, remembering that avascularity and the opacity of the tissue are concerned in the production of a reaction. The differences in the duration of the latent period of the reaction are due to variations in the intensity of the ray, and lack of uniformity in the accessory details of application. The reaction presents the ordinary features of an inflammation, the various stages of which are prolonged, and examination of tissues which have been subjected to X-rays shows that the epithelial cells undergo cystic degeneration and disappear, and in another case that the cells are invaded by leucocytes, the vessels dilated, and that inflammation exists. Ewart thinks the X-rays is a clumsy means for the treatment of lupus, and not as efficient as the Finsen light, while the benefit to malignant disease by means of X-rays is questionable. Rodent ulcer being superficial is usually benefited, but sarcomata are seldom improved by them. Pain is frequently relieved in hopeless cases, but the relief cannot be compared to that which is obtained from a hypodermic of morphine. If the patient is too feeble, or the growth too extensive for removal, or has recurred repeatedly the rays may be tried. In eczema relief is rapidly obtained, but is only temporary; in tinea sycosis relief is obtained with rapidity and permanency.

To measure X-rays Franklin suggests a method based on the power of the X-rays to ionize the gases through which they travel; the method is substantially analogous to that now commonly employed to measure the radioactivity of the radioactive substances, thus air is rendered a conductor of electricity by the ionizing agent, and measurement of the amount of current flowing through it under given conditions gives an absolute index of the activity of the radiation. The electroscope is charged by coming into contact with the knob, a rod of vulcanite which has been electrified by friction, while this knob is brought into communication with a filament while the vulcanite is in contact, and is released as soon as the filament has assumed a horizontal position. The electroscope is brought to the same distance from the tube as the patient or plate, and while the tube is running the shutter is open, and the time in seconds occupied by the filament in transit is determined.

A diabetic patient, who had a patch of lupus on the buttocks for nearly twenty-eight years, was treated by Dorn with the X-ray. The cancroid had developed on this patch, but the ulceration, 5 to 6 cm. in size, healed under Roentgen treatment to a most satisfactory extent. Diabetes in this case (7 per cent. sugar on ordinary diet), is no contraindication to Roentgen treatment, and the success in this case was especially gratifying on account of the duration and extent of the lesion and the lack of any special reaction to the X-ray exposures.

The work done by Battersby in the Soudan, and by Beevor in the Indian campaigns has impressed the English authorities with the importance of military X-ray outfits. After the battle of Omdurman there were twenty-one cases out of one hundred and twenty-one in which the bullet could not be detected by ordinary means, but in twenty cases an accurate diagnosis was made by the X-rays, the remaining case being too ill to be examined. The senior medical officer in charge reported that "The Roentgen rays proved of invaluable assistance in localizing the exact position of bullets, and in many instances rendered probing of wounds unnecessary." In this campaign an ingenious device was used to charge accumulator cells, a small dynamo driven by a tandem bicycle answering admirably to charge eight separate E. P. S. cells used with 10-inch coils. This device may commend itself to workers in out-of-the-way places, away from electric supply stations. In Beevor's case the X-ray work was done in cold climates amongst the mountains; in Battersby's in the heat of the Soudan, thus proving that extremes of climate are no barrier to the successful use of the X-ray.

The red-tape limit has probably been reached in the following incident (for which we do not however vouch): In 1877, a young French doctor applied for a small post under the Government. He heard nothing more of the matter until recently, when he was required to fill up a blank in order to get a nomination for the position he had applied for nearly thirty years before.

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BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

EVERY year brings with it a new calendar, revised in its artistic design, reversed in the combination of its refreshing color flourish—but it does not obliterate any standard facts of the zodiac nor change the laws of relation between the earth's soil and that soil's annual crop productions. From the genius of the world's business enterprise there float abroad in perpetual succession the diverting advertising blotters which are planned to constantly turn up to attention the latest mastering ideas over the past conventionalized fad that ambitious competition has timely turned down as another superb failure.

Within the cycles of our later twenty years there have been heralded to us comets of cures visible above the horizon of medical doubt, cures that would set the world on fire with glorious admiration; but the world has in nowise yet gone out of the same old business of doctoring and burying her undiminished concourse of victims of tuberculosis. Then and anon there have been boomed to us new and flattering blotters for the elimination of consumption from society about us everywhere; then and anon these new and specialty cures have not for an hour blotted out the hectic blush of said consumption. Tuberculosis has remained the steady-stepping blight of the people—the uneffaced failure of every doctrinal proposition that sighted its aim of elimination by the bead and shot of tuberceline inoculations. The parturient Old World keeps herself busy at giving birth to prodigies for the spontaneous United States to nurse and patronize. She has sent us her Patti, her Irving, her Madame Bernhardt to coin inexorable riches from our glad and fawning people, people who dispose themselves to practice the Yankee knack of blessing also their home stores with the prodigious profits of American industry adroitly syndicated under grafting capitalists. The Old World sent us also the marvels of Koch's cure for consumption, and disputive theories anent the human risks of pork and milk and rare beef steak transmitting the atrocious microbes of tuberculosis, but said tuberculosis, nevertheless, though a constitutional degeneration, to be arrested and cured by the puncture of hypodermic needles and the squirt of anti-tubercle serums beneath the skin of the population!

The latest Old World tuberculosis blotter heralds to us the victorious coming of "A New Consumption Cure," in a few months later to be delivered formally to the American people. Its significent advent was paternally announced at the late international congress in Paris by Professor Von Behring—who proposes to "bring it within the reach of the poorest people in every part of the world within a year, according to a statement made recently by a member of Professor Von Behring's American agents." According to a prominent New York daily, this agent does not concede that Von Behring is holding back his announced discovery for the sake of the money to be gained from its exclusive use. It is in evidence, according to advance advertising report, that Von Behring has conducted his line of experiments among cattle. He has devised a vaccine serum. He calls his vaccine "bovo-vaccine" for the immunization of cattle from tuberculosis. He infers that his preparation may be appropriately applied to mankind! The mercantile inference suggests that for the sake of being immunized against liability to consumption every man, woman and child in this scourged land will glady bare arms for the reception of hypodermic doses of this miraculous antituberculous vaccine. If each arm operated on rate at from ten cents (for the price is to be brought within reach of the poorest people) to one dollar per arm for the founder of this experimental germicide bluff, let the skilled accountant get out a copy of the census statistics and report the prodigious sum of patent right receipts for the new vaccine owner. Next August is reported as the time set for inaugurating the delivery of this new antitubercular serum to our expectant public, which means the anticipative practicing physicians who reach all classes of the public. Special rates are to be considerately arranged with philanthropic institutions and to persons in poor circumstances who cannot afford to pay standard prices—and in extreme poverty there are to be discriminating gratuitous distributions.

But it is rational deduction that the difference between curing an animal even, that unmistakably has tuberculosis, and supposedly immunizing a healthy animal that needs no cure, involves an adroit juggle of self-contradiction in the face of this plausible proposition. If the studious Professor will take for demonstration one hundred cows that have markedly run down in flesh notwithstanding abundant food, that are weak and languid with debility, that have a betrayal habit of cough, that yield milk revealing the so-called bacillus of tuberculosis—and he then by injections of his bovo-vaccine serum cures even seventy-five per cent. of these diseased cattle, making them healthy, thrifty and sleek—then the eminent Professor Von Behring has proved his test to be a cure as claimed. But to switch off from his radical proposition by inoculating a hundred healthy cattle that may never develop tuberculosis though belonging even to the same pasture, means nothing decisive if because within a year or two years they manifest no observable evidence of consumption. The real difference between a visionary possibility and the patent fact of a thing that actually is, measures the difference between the fancy of a fable and a material truth.

Unfortunately for the world, the mastering conditions of vital degeneration in developed tuberculosis of positive character are locally and constitutionally such that no serum inoculation beneath the skin can arrest the disease; and all expectations of success raised by the promising serum cures in these grievous cases at best prove to be pretentious fakes. Consumption has not been abated one whit since the Koch cure was so plausibly boomed. And if we complacent students of nature—natural cause, natural results—may be permitted to express in advance what is coming by Von Behring as evinced by what is vanishing out of sight by Koch, we can already see the futile end of this new consumption blotter before it arrives. In a few years after, the sunken graves of dead things alike resemble each other—grass of forgetfulness covering all. It is doubtless true that between Dr. Koch's theoretic ken, according by which he wrought to establish his desired object, and Dr. Von Behring's counter theorem by which he hopes to establish the value of a new therapeutic discovery in his name, it is said there exist direct opposites of position. It is reported that Professor Koch has sensibly held that human tuberculosis does not come from animals that have that disease. Von Behring,

however, thinks he has determined by experiments that tuberculosis from animals is communicable to mankind. It is acutely doubtful that he has ever practically proven this assumption. But by his reasoning process he expects to identify the two diseases, animal and human, as the same. In legal phrase, his attitude to the Koch doctrine is John Doe *versus* Richard Roe—and the jury may all die before the true verdict is reached. But without waiting, Von Behring proceeded to tentatively strengthen his position by producing what he claims is a curative medium by which animals experimented on by him should be rendered immune to the tuberculosis germ on the principle that dog eat dog if the stock be generically identical. Von Behring, if I understand him, took the tack that the principle of his curative medium rests upon the impregnation of the living cells of the organism with a substance originating from tuberculous virus. But it is a travesty of pathological logic to assume that animal poison kills animal poison of the same sort, and hence thereby becomes a cure—when considered in the broad terrific sense of systemic degenerative tuberculosis. Von Behring's anti-toxic serum for the cure of diphteria has fulfilled nothing definite except theoretic promises, inasmuch as the annual crop of cases of diphtheria continues as enormous as before or ever—even increasingly so.

The anti-diphtheria serum treatment has been pushed in Philadelphia for more than it is worth by all the forces of the agents of the local Board of Health, by gratuitous dispensation, by the potential enginery of professional obeisance and public fear; but the report of diphtheria cases for the three weeks ending to-day, November 25, 1905, with the moderate temperature and delightful air of Indian Summer, is two hundred and eighty-six cases, with thirty-eight deaths. The frisky professional shift and the versatility of news reporters aver that the increasing number of contagious cases and deaths have been "caused by climatic changes" —the same old chestnut! Listen to their deprecative libel on these perfect days, with scarcely a divergence of comfortable temperature—just cool enough to enjoy a moderate heater fire and closed windows. These latter and not the prestige of any microbes through "climatic changes" explain the problem. When a man with bacilli in his eyes studiously starts out to pursue an object of that vision, and shapes to fit it with a theory of set purpose, he gradually sees it so distinctly in his dream that he believes it is bodily always before him. Such is the nature of brain concentration. Von Behring doubtless theoretically believed that he had discovered the exact germicidal antidote to diphtheria. And that belief, fallacious as it proves to be in effect, naturally lends itself to the kindred belief that he has similarly promulgated a germicidal antidote for tuberculosis—a pathological theorem that may at least for experimental purposes win out a flank doctrine against his rival Koch. But it is no less certain that a misjudgment, though sincere, that veers too far to the right from the safer middle of the bridge for the sake of steering away from the left, must land the embellished idols with which said misjudgment is freighted among the overspanned brush of disappointment.

When Koch discovered the bacillus or ferment attending tuberculosis degeneration, he apparently disposed himself to infer that he had discovered what it was that caused consumption. He, therefore, set about divising an antitoxin combatant to that bacillus, supposing that thereby he might abort and stamp out consumption. He failed to broaden out his reasoning to the mastering natural fact that it was the process of systemic devitalization and degeneration that made cause for the presence of the very ferment or bacillus he found in consumption. With his mind's eye pursuing the trail of the bacillus, he overlooked the futility of attempting its neutralization EXCEPT by blotting out its existence through the regeneration of vital energy by the natural media of purified breathing-air and reconstructive nutrition. Pouf! pumping "sterilized lymph" under the skin of consumptives to squelch "germinal" ferment developed by decay in the breathing channels and lung cells. Open gates and doors to every dirty and gaseous poison that can be inhaled with every breath! What a sophistry to common sense when one can independently examine the hypothesis with disencumbered mind! How incomparably superior is the rationality of prevention and cure which bases its study on the conditions and aggressions that naturally devitalize the blood corpuscles and scourge the lung tissues to death? If I mistake not, both Koch and Von Behring seem disposed to consider milk and meat the wholesale conveyers of tuberculosis to the human system—though the doctrine has been stoutly rejected by other distinguished teachers. Milk from a tuberculosis cow would be an undesirable proposition, but let us examine into the problem a step or two. Suppose, for argument concession, that a ferment-impress of bacillian nature find way into the milk, it is not there as drawn from the breast of woman; then why so when drawn from the udder of a cow? But, furthermore, if a discoverable or undiscoverable element of ferment of bacillus type reached the stomach with foods, what must happn to it when impounded by the solvent flush of gastric juice that settles everything usually swallowed into a converted product of its own normal mash? Let us come down off the shed awhile and analyze the soil of rational deduction! Does one out of every ten who passively salaam over the classics of microbe dynasties really comprehend that a bacillus is as destitute of vitality as is a soap bubble! That it may be produced as readily and as readily dispersed? Our recent microbe mania has as little reason for its dominance in credulity and literature as a disease-maker, as had the mania about the malevolence of witchcraft in the seventeenth century, with its thousands of condemnations to execution. The philosophy of Ella Wheeler Wilcox is superior wisdom when she exclaims to her quarter million readers: "Don't spend your life dodging germs! Do not be one of the fear lunatics! Do not become a germ maniac or a food crank! Life is a beautiful privilege if we let our thoughts rise above the digestive organs!"

The anti-microbe blotters that the mail continually delivers are labeled with their assurances of special prophecy; how generally it may be discerned that the extra assurance has behind it an axe to grind for personal profit. Enterprise makes her opportunities. The graft of Equitable Life Insurance Associations, that construct fabulous wealth for astute managers from the fears of death among trustful common people, is not the one and only. It is altogether true that the world wants to find sure cures for diseases. But it is equally true that a hundred fold more can be done along the line of preserving the lungs by sanitary media than by the intrigue of serum proclamations. Notwithstanding our ideal November weather the present year, with com-

fortable temperature and generally lowered death rate, there are officially reported for Philadelphia during three weeks of November, one hundred and forty-five deaths from tuberculosis of the lungs, also seventy deaths from cancer—both relatively slow forms of disease in which there is measurable time for arrest and cure if blotter serums could demonstrate curative proficiency. Like waves of the sea the succession of great remedies, learnedly projected, roll on the crest of popular push to break on the shore in foam of undemonstrated success. In face of the natural eagerness to secure a positive remedy for the corroding blights of cancer and consumption, it proves the greater pity that equally certain disappointment must blot the anticipations so methodically raised by both Dr. Koch and Dr. Von Behring through their elaborate theories of cure in tuberculous disease by inoculation of the blood with antidotal lymph. Aside from the éclat fanned by the breeze of popular interest with which bold and ardent experimenters may surround themselves in the sensitive medical sphere, it is almost surprising that learned men of candid and cautious instincts would specialize their study to such theoretical and speculative extent that they either will need confess that they voluntarily embrace a self-credulous problem in physics for its novelty—or consent, each in his way, to elaborate an experimental paradox to engage the hopes of an expectant profession and public for whatever capital could accrue from its trade in trust. In this age of smart profit-seeking, men rarely work hard and long without an eye to substantial remuneration. Men live not by word of breath alone, but by the bread and butter comfort also of pecuniary income.

From the physical limits of the situation a rather tamer, more reserved reception and result doubtless await the Von Behring blotter cure. Hopes unduly raised by the yeast of enthusiasm, naturally relapse into incredulous apathy, and appreciation ultimately flattens to the more effective hard-tack of conservative deduction. Nevertheless, so warm is the color of concentrated belief on the part of the inventor of this inoculation remedy, that the Professor himself is said to feel confident of securing with it as satisfactory results as he did by interesting the world in his serum method of treating diphtheria. But against this assurance yet echoes the declaration of Dr. Virchow, of Berlin, whose eminence and honesty will ever merit substantial confidence. "I would warn people," he wrote, "against excessive reliance on a protective inoculation against tuberculosis. The hope of discovering a serum against tuberculosis rests on the assumption that one will be able to impart to the cells a resistive power against tubercle bacillus by properly conducted inoculations. It has, however, by no means been proved that the development of the bacillus is dependent upon the cells. This is merely an assumption on which all this serum therapeutics have been built." If we will look somewhat further along the line we will find that even Koch did not leave the fate of his treatment to the luck of his hypothesis. Koch, as doubtless will Von Behring, took precautions to surround his patient with all possible hygienic advantages, and bespoke for the success of his serum treatment all available sanatory aids in special sanataria! He premised also that to obtain "curative action" from his lymph injections, subjects should receive the treatment "in the initial stage" of the disease. He thus threw around his cases a formidable barrier to any widespread utility of his serum specialty on the one hand, and by a miscellaneous test of his specialty on the other hand by declaiming in self-defense: "I would earnestly warn people against conventional application of the remedy in all cases of tuberculosis." Except "in the beginning of phthisis," he stipulated that "in all other forms of tuberculosis, medical art must have full sway by careful individualization and making use of all other auxiliary methods that assist the action of the serum remedy." Thus fenced about, shrewdly and evasively, it left the office effected by the lymph practically nil. When read between the lines, the essence of the antidote may haply sparkle immensely for a Koch or a Von Behring, but fades to a vanishing point for the consumptives. The scapegoat is adroitly saddled with "in the initial stage" of the disease, but "initial symptoms" are not the disease itself. There are hundreds of remedies which may suffice in first symptoms, but, like these lymph blotters, fail to cure in confirmed cases. Even sanatory surroundings alone—pure air outdoors and indoors all the time—freedom from the malaria of bad cellars—avoidance of the corrosive poison of fuel gases in house and shop air—virtues of systematic ventilation and sunlight—relief from exhausting drudgery of body and brain, with plentiful foods and rest—these agencies of substantial health prevent and also cure disease in general—ordinary tuberculosis disease in particular—if timely and faithfully employed—without the tomfool masquerade of serum inoculations in the skin! Koch, at least inferentially, based the repute of his inoculations more on the value of sanitaria than on the inherent virtue of his bacillized lymph. And by the printed talk of Von Behring, his bovo-vaccine cure will stop short of positive alleviation in real cases of tuberculosis, for, as already stated, his experiments have been listed precautiously on the line of ostensibly "immunizing" healthy cattle!

Both Koch and Von Behring deserve accorded credit for their patient investigations in bacterian developments per se. Bacteriology is an absorbing study for the entertainment of investigative minds; but when it is proposed to graft the whole science of pathology on the precarious bacillus, we betray ourselves to a myth of fermented imagination and misjudgment. There was a noted precedent to this antitoxinism—the reduction of the violence of smallpox by vaccine virus. But the relation between smallpox and tuberculosis is unfortunately incongruous. The two forms of disease have no concurrent elements. Smallpox is a short-lived contagious disease, which attacks persons in full health and strength, runs a brief definite course, and there ends, usually, if not in death, leaving the individual as well as before. But tuberculous disease is one of debility and waste; of indefinite beginning and duration; of progressive stages, pauses and relapses, which may compass months or years before the end. Since the subject of tuberculosis is and has been usually living in an atmosphere of bacteria in general, no inoculation intended to nullify bacterian influence by imparting resistive power against tubercle bacillus can hold the fort against a wasting system in which vitality itself is a losing game every successive month of dwindling existence. At best, the injection of formulated stuffs into the blood of a debilitated case is essentially doubtful practice. Koch's lymph operated as a poison, as Koch described the symptoms of an injection on himself: "Pain in the limbs, fatigue, inclination to cough, difficulty of breathing which speedily increased in the

fifth hour and was unusually violent. A chill followed, which lasted almost an hour. At the same time there were nausea and vomiting, and rise of body temperature or fever. After twelve hours these symptoms abated. A feeling of fatigue and pain in the limbs continued for a few days, and for exactly the same period of time the sight of injection remained slightly painful and red." This picture is an emphatic demonstration of the human system to rid itself of the poisonous aggression of serum lymph, or bovo-vaccine as well, when it comes to the practical test. After all, it will require five years to prove that Von Behring's inoculations possess either remediable or preventable virtues—all blotter announcements of hasty cures or immunizations being premature and sensational advertising, to grace the bulletin board of hope. Many deaths by tuberculosis were considered hastened by the use of the Koch cure, and after a feverish vogue of experiment its supposed prestige waned. Kingly honors and harmless decorations may reward knights of new projects for the obliteration of persistent diseases; but while the badge of honor may be gracefully worn as evidence of heroic proposition for the alleviation of the suffering, the "discovery" smolders to ashes of failure and the death lists remain undiminished. Tuberculosis and cancer yet must be dethroned by the superior antidote of purified blood through the sanitary riches of purer breathing-air indoors and outdoors, day and night time, every hour of existence.

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THE DUALITY OF ALL ORGANIC STRUCTURE.

BY F. B. BRUBAKER, M.D., MIFFLINBURG, PA.

PART II.

I have said in a former essay that the coming together of two protozoon cells, which are protoplasmic and never more, is the beginning of a rising duality, and we found in that essay that on the one side, we have protoplasmic force, and on the other, nervous, but if the coming together and fusion of two masses of protoplasm, as shown in the most primitive organisms, which never develop a nervous system and dual structure or force, it must be here evident likewise because protoplasm is formative, and whatever is formative must be likewise structural, and if, as we very well know, the structure of nerves proper is protoplasmic, although their function is a thing distinct in itself, yet must they also be dual. For to maintain the union of distinct elements or forces and the same being protoplasmic and sexual or not, a dual structure, no matter where it builds. So that on the protoplasmic side we find that in intrauterine life which undoubtedly represents the perfect evolutionary stages through which they have been evolved and represented in lower organisms in the blood corpuscles, a first set of which is formed from embryo cells and which eventually disappear, being replaced and superseded by a second set formed from lymph corpuscles, and in these also we may see an example of the length of life of elemental parts being determined by their activity of function; for if the development of the tadpole, for instance, be retarded by keeping it in a cold, dark place, and if in this condition the function of the first set of blood corpuscles be slowly and imperfectly discharged, they will remain unchanged even for many weeks longer than usual, and their individual life will be thus prolonged, and the development of the second set of corpuscles will be for the same time postponed. Now this fact so plainly manifest in the experimental history of the tadpole, unquestionably points us to two forces which are also made manifest by a double blood power, we assume from this, therefore, that perhaps the single sexual element is developmental, and the compound or impregnated ova both developmental and structural, and this would seem in nowise far-fetched, seeing that certain fertile eggs can be produced *without the aid of the male.* On the other side we have development, a distinction being plainly evident between the same and increase and growth, and our position made plain when we point to the fact that development in all cases means that power of nature to make over in corresponding image its own structure, part for part, and holding in exact counterpart the embryonic impress, subserving and not losing. Thus we see dwarfs and giants which developmentally are similar, yet when we come to increase or growth, we lose sight of the same, for the giant does not contain a greater perfection than the dwarf, nor *vice-versa.* It is plainly evident, therefore, that we must look to a higher state of form or composition that development differs from growth or increase. In growth, no change of form or composition occurs, but parts only increase in weight and usually in size; in growth there is an addition of quantity but no improvement in the quality of a part; the power of the growing part increases with the growth, but it is only more of the same power, so in the attainment of manhood, the heart of the boy, having all its necessary parts and all well-formed, acquires perfection by acquiring greater bulk and therewith greater power. Now in the formative process as it is normally manifest in the adult, parts only preserve their status and no perceptible change of size or weight ensues. No change of form or composition, a sameness being maintained through the regular formation of new parts in the place of those which in the ordinary course of life die or are impaired, but the formative process which is one part of our division or structural protoplasmic duality is best manifest in that power of reproduction or reparation, whereby certain primitive animals are again supplied with limbs, tails, or what not, after being once lost, and which is sometimes plainly seen in intrauterine life, even of the human species, being first manifest however in inorganic life as crystals. The reparative power in animals being highest in those lowest polyps in which the materials of the germ-mass are least transformed but are multiplied and grouped into the shape of their very bodies. In the Hydra Veridis and Hydra Fusca, it seems literally true that any minute portion divided from the germ-mass may, after being separated from the perfect body, reproduce the perfect form. Cut a Hydra into four or into fifty pieces, and each becomes a perfect Hydra. Cut off its head and it develops a new one, split its body at the head and you may develop ten heads, each of which performs the perfect function of eating; and as we approach a step higher, say to the Hydra Tuba, if cut in half, each half may regain the perfect form, although less rapidly than the former. But this remarkable power of reconstructing a whole and perfect body by the development of a fragment is limited, and is only found in such species that can propagate by spontaneous fission or gemmation, or that increase their size as some of the Anellata do by the successive additions of rings that are developed after the

manner of gemmules from those that precede them; where this power is not possessed, whatever be the position of the species in the animal scale, the reparative power appears to be limited to the reproduction of lost members, such as legs, claws, a part of the body, the head, an eye, the tail, and the like, and within this limit the rule again seems to hold good that the amount of the reparative power is in an inverse ratio to that of the development, or change of structure, and mode of life, through which the animal has passed in its attainment of perfection or on its way thitherward. Here then, we have an exemplification of the law of formation as manifest in these lowly creatures and which by gradual steps is lost in so entire a process as we approach man, the reparation of whose body is limited to those tissues which are formed entirely by nutritive repetition as the blood and epithelia, or to those of lowest organization or low chemical character, as the gelatinous tissues, or which are inserted into other tissues and not essential to their structure, being accessory. And thus we behold that whether on the one hand we believe the restoration of a part, as in the leg of the Salamander, to be due to retained embryonic cells, from which are developed the lost part, or whether the formative process resides altogether within the nutritive stream, it matters not, seeing that the leg is replaced in perfect form, and which points us to the fact that residing within the protoplasmic cell, we have the power of formation, and which builds to an exact likeness, minus the law of variation, the child to the counterpart of its parent, and at a corresponding age. On the other side of protoplasmic force we have the remaining part of this duality of form, viz., growth, and which consists of the increase of a part or of the whole body by addition of new material like that already existing, the essential character of each organ or tissue being maintained with its quantity increased; for a general expression of the course of events we may say that the development and the growth of the body go on together till all the natural structures are attained, and that then development ceases and growth goes on alone till the full stature, and the full proportion of each part to the rest are gained. But this is only generally true, for we cannot say that all development ceases at a determinate period, since some organs may go on to be developed when many others are complete, neither can we assign the period of terminated growth, since not only is the period even generally stated very various in different persons, but some parts, unless placed in unfavorable conditions of disease, continue growing to the latest period of life, yet on the whole the law is true, and we are not here searching for exceptions, but for the whole law, consequently, to protoplasm from its primitive side must we ascribe an accompanying duality (and this is necessary seeing that as in the oak, protoplasm builds majestically), and yet without the nervous, and seeing also that we have ascribed a duality to all organic structure. Therefore, from the side of protoplasm we behold a duality of form or structure, the one formative, and the other additional, both of which are nutritional.

If, as in the foregoing, we observe that an accompanying duality is coincident with protoplasm itself, the same being the result of the union of two forces which are at all times manifest by the union of distinct and separate sexual elements, then as we build higher should this same duality of structure subserve and be always evident, for if on the one hand we find that this same dual structure runs coincidently with protoplasm itself, then on the other, must be likewise evident a like structure being nervous, if we should look to the histologic structure of all nervous organization we shall likewise find it composed of two elements, both of which possess special vital properties, the one being formed of nerve fibres which are composed of thread-like strands of protoplasm and which connects the elements of the other or nerve corpuscles which form the periphery or central terminals of the fibres, nerve fibres being simply conducting agents having at one end a special terminal or nerve cell for sending impulses, and at the other end a nerve cell for receiving the impulses, and the terminal organs between which the nerve fibres pass are the agents which determine the direction in which the impulses are to travel along the nerve. We look therefore for ganglia composed of the vesicular nervous substance and serving as the centres of nervous power and for cords and trunks composed of the tubular substance, and serving to communicate between the ganglia and the parts with which they are to be functionally connected. Now it is quite certain that no such nervous apparatus can be detected in many of the lowest animals. Among the radiated classes the parts of whose bodies are arranged in a circular manner around the mouth and repeat each other more or less precisely, the nervous system presents a corresponding form. In the starfish, for example, which is one of the highest of these animals, it forms a ring which surrounds the mouth and this ring consists of nervous cords which form communications between the several ganglia, one of which is placed at the base of each ray, and the number of whose ganglia corresponds with that of the rays or arms. The ganglia likewise appears to be all similar, the one to the other in function, as they are in the distribution of their branches; every one of them sending a large trunk along its own ray and two small filaments to the organs in the central disk, the rays being also so similar in structure as to be exact repetitions of each other, it would appear that none of the ganglia can have any controlling power over the rest, all the rays in certain species have at their extremities what seem to be very imperfect eyes, and so far as these can have any controlling influence over the rest. All the rays in certain species have at their extremities what seem to be very imperfect eyes and so far as these can aid in directing the movements of the animal, it is obvious that they will do so towards all sides alike. Hence, there is no one part which corresponds to the head of the higher animal, and the ganglia of the nervous system, like the parts they supply, are but repetitions of one another, and are capable of acting quite independently; consequently each would perform its own individual functions if separated from the rest, but in the entire animal their actions are all connected with others by the circular cord which passes from every one of the ganglia to those on either side of it. And thus we see that in the lower order of animal life in which is evident the first promise of a future nervous mechanism, a ganglionic system is evolved; each segment evolving a pair, as in the ringed worms, and the arthropods, and as we have just seen in the starfish a ganglionic system or centre rather, for each ray or arm. Now it is a startling fact indeed that as we go higher in the scale of animal life we find that this primitve form of nervous mechanism is not lost, for in articu-

lated and vertebrated animals there is a similar repetition of corresponding ganglia on the two sides of the median plane of the body and these are connected by transverse bands analogous in function to the circular cord of the starfish. Moreover we also see a like repetition of ganglia almost or precisely similar in function in passing from one extremity of these animals to the other, these ganglia being connected by longitudinal cords, whose function is in like manner commissural. Now it must be at once plain that in the gradually ascending plane of organic existence as manifest in the animal, the nervous system first became evident as a series of ganglia each evolved to subserve some new addition of structure, as before noted in the ringed worms, each being complete in itself and capable of separate action, therefore we need express no surprise that as we have before seen each segment may evolve a new and complete creature if severed. Again it must be entirely evident that the gangliated nervous structure before us subserves some useful and immediately vital end in the economy of those evolving structures which sustained them, and this we find at all times apparent in the ends attained by those lowly organisms, which, having arisen above the vegetable, were gradually attaining a higher structure, and these upon minute examination we find to relate to the involuntary, or that which directly appertains to those vital processes upon which life itself momentarily depends, viz.: circulation, respiration, and the like. But we are not surprised to find that in the highest structure of animal life or man, this primitive ganglionic system is still evident and indeed subserving its highest end, which we at once behold in the great Sympathetic nerve, which consists of a series of ganglia connected together by intervening cords extending on each side of the vertebral column from the base of the skull to the coccyx, together with three great gangliated plexuses or aggregations of nerves and ganglia situated in front of the spine in the thoracic, abdominal, and pelvic cavities and consisting likewise of smaller ganglia situated in relation with the abdominal and other viscera and of numerous nerve fibres which are communicating and distributory and from which the greatest of all systems take origin, viz.: the vaso-motor.

And thus we have on one side the gangliated or involuntary system of nerves to which the vaso-motor system belongs, and on the other we have the cerebro-spinal, or voluntary system. Now, as is well known, the cerebro-spinal system or nerves belong to the vertebrates in contradistiction to invertebrates, and while as in all other structure of organic origin a thing gained is permanently gained, so long as it subserves a useful purpose and is therefore exercised, and as in the evolution of nerves the ganglionic or involuntary being the system of life itself, we find in addition in this higher structure not only this system but likewise the former which we find to be voluntary. The cerebro-spinal system or that of voluntary action therefore consists of the brain and spinal cord, the cranial nerves and the spinal nerves. Therefore, from the other half of our division of all physical phenomena we behold two phases, the one ganglionic, vital, or involuntary, and the other cerebro-spinal or voluntary.

Consequently in our structural duality which on the one side is protoplasmic, we have the formative process, while on the other, we have growth and from the other side, we have the nervous, which upon examination we find to be divided on the one side into a most primitive structure, viz.: the ganglionic or involuntary, or if you please, vital, which is life itself, while on the other, we have the cerebro-spinal, or voluntary, or intellectual, which is the guiding power; and what is more, we find that each is joined to the other.

PALIMPSESTS OF PARASTHENICS.*

BY T. H. EVANS, M.D., PHILADELPHIA, PA.

Continuing my previous study[1] of cases of parasthenia, from the standpoint of a sympathetic entering into their lives and the elements of life as they know and appreciate it, we will plunge straightway *in medias res* with the notes of the following:

Case I. Mrs. A. G., a weaver, aged 47 years. When I first met her it was under the tragic circumstances of her attempt at suicide. About six in the evening I was hurriedly called to attend her. She had just swallowed several drams of tincture of opium.

Entering her house, which was upon a narrow, poorly-kept street in the outlying districts of the mill section of Kensington, I found her surrounded by an excited and weeping family. The house was two stories in height, and contained four rooms. The bedroom had a bare, unstained wooden floor, and was empty except for a bed, which occupied half the available space. Upon this she sat, the picture of misery and despair. A couple of wooden chairs were brought in from somewhere, and the oil lamp which sat upon a narrow shelf in one corner of the room was turned up so that I could see better, for in March the shadows fall early.

At a glance I took in the dilapidated style of dress of the members of the family, and I remembered that her son, who rented the house, was apt too often to spend his money on drink. I knew that some four months' rent was owing, because the house belonged to my father. Beside the son, there were in the room, his wife, an ill-kempt girl of twenty-two, one of his sisters, and one of hers, a younger brother, and a couple of neighbors, whose curiosity managed to pass for sympathy and anxiety.

I found that Mrs. G. had been working very hard, and contributing more than she could afford to the expenses of the family. Her husband was not dead, but was living with another woman.

One look at my patient confirmed my diagnosis. She was a weaver, and on account of scarcity of money had been living under wrong dietary and hygienic conditions. And her face, with its furrowed brow and the contracture in asymmetric lines of the circumorbital muscles told the tale of outraged nerves and an atrocious astigmatic anisometropia.

I soon learned of petty quarrels in the family, which undoubtedly aggravated the distress which she felt on account of the evil doing of her husband. But the test of the case came in the results of treatment.

She was at once ordered to bed and given a hot pack. Other treatment to eliminate the poison was instituted. After which, in the course of a few days, she rapidly recovered, with the use of shaded lenses.

It has seemed strange to me that in the Weir Mitchell Rest Treatment, as used to-day, so little attention is given to the eyes, although the most rigid care is a matter of routine to shield the ears from disturbing noises. In nearly every case of altered nerve tone, whether from constitutional irritation, or ocular defect, some retinal hyperesthesia or parasthesia develops.

I am sorry to say that the case passed from my care after three months, so that I cannot report its present state. But I do know that as soon as I had relieved Mrs. G.'s eye-strain, all the psychic commotion and distress went away.

In the next case, Case II, that of a bookkeeper, Mr. J. M., aged 44 years, we have an example of true narcosomania for alcohol, as a result of parasthenia aggravated by local irritation in the form of anisometropia. Mr. M., for two years, had resisted all influences to drink. Suddenly one evening while in New York City, on business, he had felt ill, and went to a saloon for a little whiskey. And then the trouble began. Re-

* A further report of cases, with comment.

1 Palimpsests of Parasthenics. First Studies: chiefly a contribution of data, with comment.—Med. Times, Dec., 1905.

turning to Philadelphia he was ashamed to go home, and went to the house of a good friend, from which he sent for me. He told me that he had been doing extra night work for several weeks before, and had taken cold repeatedly. He was feverish, and presented symptoms of the type of Grip.

I had his eyes refracted by Dr. W. L. Pyle. In addition to this, he was put under a strict routine of diet, sleep, work, bathing, and recreation. As is my custom, he was ordered to eat any selected articles as often as he felt a return of the craving for narcosis. In the months which have elapsed he has not returned to his bad habits. And this is the more remarkable since his outbreak after two years' prudence made us fearful that he was going back to the bad habits of former years.

Case III. Mr. G., aged 43 years, a weaver. This patient is able to go from Sunday to Saturday without using alcohol. But if he starts to drink Saturday night he keeps it up twenty-four hours, and on Monday is frequently not fit for work. I found his eyes needed attention. The results of lenses were very unsatisfactory, and on re-examination were found to be improperly adjusted. Later on, the lenses were changed on account of my belief that the axis of astigmatism was not correctly estimated. Even with this change he is not doing very satisfactorily. In his case I believe there are elements of muscular malnutrition, systemic as well as ocular.

The general sense of well-being which we experience from muscles of good tone and vigor this patient does not have. The case is too recent to report finally. But it is well for the physician to be prepared for disappointments, and be ready to seek out any possible cause in troubles of this kind. The relations with members of the family must be studied, and I do not think that his wife is one suitable for a man of this peculiar temperament. Again, his work is distinctly a disadvantage.

But in treating cases of parasthenia occurring in people of little or no financial position, as we must who treat those who need us most, for among the working classes are the majority to be found, it is well to develop methods adaptable to poor hygienic environments.

Case IV. Mr. T. T., aged 41 years. An artist and expert designer. This patient in years past had a large earning capacity, and taught classes in prominent schools of Textile learning.

When he came to me, he told me that two years previously he had suffered what was called a light "stroke." I could not discover any symptoms of apoplexy, and concluded that he might have had a suffusion of lymph at the base of the brain.

His manner of speech was interrupted and yet not rapid. His features were sharp, and his skin, on the arms, and back and chest, had the peculiar satiny smoothness of a woman. I discovered other indications of unstable sexual organization. And found well marked symptoms of neurasthenia of that cyclic form with climaxes, and subsequent retardation, that I have called parasthenia.

I found in this case, through the kind assistance of Dr. Pyle, that a strong ocular feature was involved. Again results were not very satisfactory. There were no signs of retinal disease or injury. But the ocular muscles were in very poor shape. A course of massage and hydrotherapy benefited him very much, and later on he admitted the relief which proper lenses gave to his eyes.

In this case, while strictly parasthenic, the climaxes were not marked by any resort to a narcotic. Mr. T. never drinks, and rarely smokes. But I believe that he often overeats during the time of rising nerve tension, and that many of his nervous headaches, or bilious spells, are distinctly the passing off of climaxes to periods of nervous excitation.

Case V. Mr. R. M., aged 29 years. I was first called in to treat him under the distressing circumstances of his taking laudanum with the intention of killing himself, and found him sitting in an attitude of despair on the edge of the bathtub, with his head over a basin, for they had already administered an emetic, rather against his will. His wife and a business acquaintance of his were with him. His wife is a most peculiar woman, of the blonde type, and with a manner of walking and speaking as though she was continually in a dream. I learned afterward that during her engagement to Mr. M., he had discovered her in unfaithful relations, but married her nevertheless, and loved her very much. Mr. M.'s first wife had died about four years previously from typhoid fever. There had been no children.

His attempt at suicide to-day arose from a discovery of his business friend's presence in the house, alone with his wife. It appears that this friend's family had gone to Europe, and he was boarding, that is taking his meals with Mr. M., but sleeping at home.

Mr. M. is a paperhanger, and has his store in the front of the first floor of his house, during the day the door of which is unlocked, naturally. Mr. M., returning to-day unexpectedly from work, found the door closed and locked. Opening it with his key he hastened in, and was surprised to find his friend hurrying downstairs, buttoning his clothing. In a moment he discovered his wife and at once accused her.

Both of them are very nervous people, and in a moment he went to the bathroom and drank from a bottle of laudanum. His friend remained in the house, and protested his innocence, sending straightway for me. I managed to convince my patient that there had been a misunderstanding.

After treatment, Mr. M. and his friend entered his business wagon and went for a ride. They continued on good terms. I convinced Mr. M. that it would be impossible to attempt to do anything, and as he assured me of his love for his wife, I advised him to do nothing.

This was not the end of the case, however, as will be seen further on. But before that, I wish to add a few notes to this case. Mr. M. is of average height and build. But his voice has the peculiar weakness and huskiness of the parasthenic, in all its variability. He is very anxious to have children. But after two years' marriage, has not succeeded in his desire. I am led to believe that his wife is of a cold nature, and on the other hand, that Mr. M. is hyperesthetic and excitable.

Mr. M. is subject to headaches which result from frequent gastrointestinal derangements. His eyes ought to be attended to, but as yet this has not been done owing to his reluctance to wear glasses.

Case VI. Mrs. R. M., the wife of the preceding. Suddenly, one evening, I was called to her residence, only to find her in a state of unconsciousness. All the windows of her bedroom were closed tightly and the door as well, with its keyhole plugged. She lay on the bed, and all the gas burners were turned on full head, but unlighted.

It was her husband's wish to have her taken to the hospital, because when they sent for me I was out, and they had at once telephoned for an ambulance. She was in the hospital three days.

On her return, the neighbors being told that it had occurred through accident, she walked freely in the neighborhood. But at all times her manner had that peculiar impassive, distant, dreamy characteristic mentioned before. Her voice is soft, but the words are clearly uttered. All her muscles move as though stupefied. And yet I am sure that she does not use any narcotic.

I believe in this case there is an element of difficulty of coordination at the base of the brain. Since her attempt at suicide, she and her husband have lived together very happily. It must be remembered that in all cases of parasthenia the stage of climax is separated by intervals, longer or shorter, in which nervous tension does not reach a critical point. In the treatment of these cases we must search out every possible cause of the stage of climax.

Case VII. "Whitey." This young fellow, so known about town, and mentioned under that name in the paper preceding this, is a cocain fiend of the worst and the most miserable type. He is about 19 years old, and spends most of his time sitting in a little room which opens onto a fruit-stand in the Tenderloin of Philadelphia, where the woman who keeps it allows him to sit and recover from the influence of the "dope." He is a pathetic spectacle, with whitened complexion and straggling hair, ill-kempt and underfed. Beneath his torn clothing is no such thing as underwear, and a collar he has not worn for months until the other day when his friend T., whom I have rescued from the same life, took him that and some other clothing.

"Whitey" comes of south of Ireland parentage, and his people do not disturb themselves in the least about his degradation. In the case of T., who was born of one of the best families of Philadelphia stock, the organization of body is utterly different, and responds at once to the call of intellect.

There is nothing in "Whitey" to work upon except a blind, doglike devotion to his friend T. It seems that T. came around the neighborhood pretty much under the influence of cocain one day, and "Whitey," not liking him near the fruit-stand, told him to "get the hell out of here!"

At once he received a staggering blow, and since then is the devoted slave of his friend T.

I hope that T.'s efforts to help "Whitey" will succeed. It

is a little pathetic to hear T. talk about his friend; T. himself being so recently snatched from worse than death.

In walking through the Tenderloin, T. has shown me a couple of roundsmen (of the police force) who "hit the pipe." These men have a dull, lymphatic stupid feature, and walk lazily about.

With a young roundsman, C. McC., young T. frequently would go to dances and saloons; the roundsman, who is only 23 years old, drinking excessively, and trying to get T. to do the same thing.

All of these people know each other well, and the lives which are led in the Tenderloin are open to any one who cares to read.

"Whitey" gets a bath now and then, when his friend T., who did a little work, would spare him the necessary five cents. But he had to be taken to the bathhouse by his friend, or the money would never have gotten so far. "Whitey" does not work, except at such little jobs as Signora C., who keeps the fruit-stand, finds for him. Once she sent him to the cellar with orders to chop some wood, and in his anxiety he chopped up every stick and plank that the cellar held, and a couple of old chairs in the bargain, before she came down to investigate the results of all the clatter that his resistless strokes set up.

But usually he sits, quiet, on a little chair in the shadow of the room. And screened by the fruit-stand gives himself up to all sorts of bad habits, taking snuff of cocaine through a little quill toothpick, as is commonly used, and very often, as I said in the previous paper, openly masturbating.

At times he will stand with his arm around an electric-light pole, staring into the filth of the street—looking for money. "Looking for money," he will murmur. And sometimes he will find a nickel. In talking with T. late one night, he pointed out to me a miserable, neglected looking man, who slouched by the corner of the square. "That fellow would run from here to the river for a couple of pennies, though he won't work, only to be able to buy 'dope.'"

"Whitey," somehow, manages to get money in small sums, and more often than not sleeps under the fruit-stand until noon. He is a true example of disturbed mind-rhythm.[2] His period of necessary waking and sleeping added together does not equal twenty-four hours. In certain stages of his parasthenic cycle it is greater and in others less than that time.

I have not exhausted my patience in efforts to help him and trust to be able, in later papers, to give a more hopeful report of him.

Before I close I want to speak briefly of some of the relations of these people to Esthetics and Art.

They all have a great liking for the theatre. The lights and brilliancy and gaiety touch them and their over-sensitiveness with a resistless appeal. They are fond of making rhymes, and often show a remarkable power of memory for doggerel verses. In all of this we must separate that which is strictly vicious from that which is unmoral.

I think very often that their senses, as well as their sensibilities, have been cultivated wrong, so that they are unable to judge as normal people do. More than that, I believe that their optic and auditory apparatus does not respond to stimulus as they should, and further that we must be able to distinguish between *peripheral* and *centric* difficulties.

Since the writer has secured perfect ocular refraction, the world is new to him and his ideas of beauty in the human face have radically changed.

These abnormal people are usually anisometropic and astigmatic. I do not doubt but that their ears incorrectly report sound. Certainly they present many peculiar variations in tactile sense. Among criminals there is often a great instability in the sense of pain. This subject is very large, but what I have said will be enough to show the absolute necessity of our appreciation of their modes of life and viewpoints before we can do anything for them. I recommend to others the value of going down to these levels and assimilating experience as they do.

What it means to be hungry, and to be shattered by drink, and to be dirty, and to be sick, and to be nervous, and to be hopeless—do we understand?

[2] A Preliminary Report on the Relations of Mind-Rhythm to Nervousness.—Am. Med. (to appear).

DISEASES OF THE EAR CAPABLE OF TREATMENT BY THE GENERAL PRACTITIONER.

BY WILLIAM WORMLEY, M.D.

MANY of the ordinary cases of ear trouble can be treated properly and with propriety by the general practitioner. I will outline my ideas upon this subject.

In the first place furunculosis of the external meatus can be nicely treated, by syringing the meatus out with a weak antiseptic solution, then the meatus plugged with a tampon of cotton wool which should reach the drum. Such a tampon can be previously dipped in some such solution as that composed of forty parts of the oxide of zinc, six parts of carbolic acid, and three hundred parts of white vaseline. The pressure of the tampon and the action of the ointment should effect a cure. The only care required in this condition is to differentiate it from anterior abscess of the mastoid, which should not be difficult.

It is in the middle ear that most of the troubles occur that reach the general practitioner; this organ consists of the Eustachian tube, the tympanic cavity, and the mastoid antrum and cells. Remember that in inflammation of the middle ear usually only the Eustachian tube and drum-cavity are affected, the mastoid cells being rarely implicated in the acute condition.

Acute inflammation of the drum-cavity arising from inflammation in the naso-pharynx and Eustachian tube may be set up by irritation entering from the external auditory canal, and through the membrana tympani, but the usual source of this acute inflammation is from inflammation in the nares and naso-pharynx, involving the mouth of one or both Eustachian tubes, and then affecting the middle ear by direct transmission up the Eustachian tube or by a reflex mode of progression.

Otologists divide acute inflammation of the middle ear into two very distinct and important forms,—viz., the catarrhal and the purulent. Catarrhal inflammation is characterized by the formation of a mucous, mucoserous, or even muco-purulent secretion from the mucous lining of the drum-cavity, often affecting both ears, and frequently unattended with perforation; while purulent inflammation on the other hand is characterized by more violent symptoms, the formation of pus in the cavity of the tympanum, and extensive destruction in the membrana tympani.

Taking up first the catarrhal form as the simplest variety, we find that most middle ear disease begins in the following way: the first sensation is the "stuffed sensation" in either or both ears; this is seen most commonly in the so-called colds in the head. Let us see what exists here on which inflammation can work. Lying between the mouths of the Eustachian tubes is a rich glandular territory, resembling somewhat the tonsils, often called "the pharyngeal tonsil," while the nares are amply supplied with blood-vessels in the erectile tissue over the turbinated bones. In coryza all of these nasal and naso-pharyngeal structures become engorged

and directly transmit inflammation to the Eustachian tubes or press upon their mouths; this swollen state of the naso-pharynx at the least induces a stasis near the Eustachian tubes, maintaining an irritation in this sensitive region. We know that unimpeded nasal respiration and unimpeded aeration of the Eustachian tube are absolutely necessary to the maintenance of a normal ear, so on the appearance of a "cold in the head" impeded nasal respiration and aeration of the naso-pharynx, Eustachian tube, and middle ear occurs. An acute catarrhal otitis media, exists in such cases. Frequently the stuffed feeling in the ears, and even some dull pain, pass off in a few days by spontaneous resolution; but in other instances this fortunate termination does not take place, but the stuffed sensation felt in the early stages of the coryza increases rapidly, perhaps in both ears. The patient's own voice sounds hollow, which symptom may be succeeded by a positive dulness of hearing for objective sounds, and at the same time more or less tinnitus aurium sets in. This pain may become severe in catarrhal otitis media, but rarely as severe as seen in the purulent form; while coughing, sneezing, and eructation become more or less painful in the earlier stages before secretion occurs. When secretion has formed in the ear the patient may experience vertigo, from the distention of the drum-cavity with the products of inflammation; this inflamation pressing upon the fenestræ on the inner tympanic-wall, compresses the labyrinth-space and the fluid in it; this pressing upon the nerve filaments in the ampullæ of the semicircular canals, produces vertigo. The membrana tympani thus affected at the outset of the inflammation, will appear dulled in lustre and reddened in the region of the membrana flaccida, around the periphery and down the handle of the malleus; while gradually, in severe cases, this redness may extend over the entire membrane, and the whole surface looks rough and flattened, but not retracted. The accumulated secretion behind the membrana may bulge the membrane outward, if the matter in the drum-cavity be thick and copious; if it is thin and not very copious, it will be pushed inward by the membrana, which now becomes retracted from the absorption of air from the tympanic cavity; being due to the disturbed equilibrium in atmospheric pressure on the inner side of the membrane which enables the outer air to press the drum-head inward, and thus the retraction takes places. Should the membrane be not thickened nor greatly congested, when the fluid is thin, it may be seen behind the membrana, and, if air is then forced into the drum-cavity through the Eustachian tube, bubbles may be seen in this fluid behind the drum-membrane. In actual experience in a purely catarrhal otitis media, the inflammatory process advances no further and suppuration is not reached; at this point the pain stops, the hissing tinnitus and the dullness of hearing with autophony remain, although the patient may experience some dizziness when walking; the process in the nares and naso-pharynx will have been arrested, and the discomforts of the patient do not increase as a rule. The membrana tympani may rupture spontaneously, and an escape of mucus take place; this spontaneous perforation may occur at any portion of the horseshoe zone lying between the periphery and the manubrium of the malleus, and running from the antero-superior quandrant to the postero-superior quadrant of the membrana, the spot most favorable to drainage being the postero-inferior quadrant. Generally as soon as the drum-cavity has thus emptied itself and the inflammatory process subsided, the perforation will close spontaneously, in some instances remaining open only a few hours. In others the perforation may close after the ear has discharged for a time. Generally, however, in acute catarrhal otitis media the drum membrane does not spontaneously open, while the pain is usually of a light character and short duration, ceasing as secretion appears.

Should the attack not be the first one the membrana may be thickened from the previous disease, and even if mucous is behind the membrane in the drum-cavity, it cannot always be readily seen, unless it be in large quantity, and yellow or reddish in tint; if the entire cavity is not full the surface of the fluid in the drum-cavity can be seen as a dark line running horizontally across the membrana tympani about half way up or higher, near the sort process of the hammer-bone. After inflation this line may break up into bubbles, or the force of the inflation may scatter the fluid away into the deeper recesses of the middle ear and mastoid antrum; in such cases the fluid is nearly transparent and amber-colored, unless there is considerable admixture of blood, when, of course, it will be reddish. In acute catarrhal cases the membrana tympani, after secretion has occurred, is much more likely to be retracted than bulging; the latter being observed only in the more severe cases bordering on, if not reaching, the purulent stage. The auricle is not sensitive to touch, nor is the mastoid apt to be sensitive to pressure in ordinary acute catarrhal otitis media. A tendency to spontaneous arrest exists, and in some instances to spontaneous resolution and return to a normal condition, if the subject is in good health, and the process is not modified by any epidemic influence as influenza, or by blood poison, as in syphilis or malaria. Do not hinder this desirable result by injudicious management, but favor it by careful hygiene and cautious treatment.

As this condition starts generally in coryza, let us study the treatment of acute coryza as a preventative; first, a patient should be strictly confined to one well heated, well ventilated room, and the nose should be washed out three times daily, either by snuffing up medicament or by irrigation. I use such an instrument as the so-called "glass bird" with glyco-thymol, or often a glass of hot water, or an infusion of eucalyptus leaves. If much headache persists give some appropriate remedy. I like very much aconitine and the hydrochlorate of quinine. Some authorities advise the sniffing of cocaine, but as a rule I do not use it; if wanted, some such prescription as this is excellent:

℞ Cocainæ Hydrochloratis .....gr. jss
Mentholis .....gr. ijss
Acid. Salicylatis .....gr. viij
Acid Boracis ..... ℥j
Pulv. Amyli ..... ℥jss

Mix and reduce to a fine powder; every two hours a pinch of the snuff may be taken after blowing the nose.

Or:

℞ Bismuthi Salicylatis .....℥ss
Camphoræ Pulveristæ ..... ℥j
Cocaine Hydrochloratis .....gr. ¾

Make a fine powder to be used as a snuff.

Do not give quinine in large doses, or salicylic acid, for they tend to congest the head and the entire auditory apparatus. Be careful of the old-fashioned

"nasal douche" also. It was the terror of my own childhood, and I believe it may do more harm than good, especially if the pressure of the current is increased by raising the reservoir above the head, for in this way the fluid is forced into the Eustachian tubes and middle ear, and the otitis is aggravated.

Nothing should be dropped or poured into the external auditory canal and upon the membrana tympani, even warm water should be avoided; "don't feed a cold;" let the diet be light and give no alcoholic drinks. Dry heat over the ear or in front of it on the cheek will relieve the pain, such as can be obtained by any ordinary four-ounce bottle, or by a hot salt bag, or hot stone or brick rapped in flannel. The Japanese stoves, heated by fuses, make an elegant method of supplying this heat.

Should these simple remedies fail, then punch the congested membrane with a paracentesis needle, which will generally relieve the condition, although the pain may persist for a time. If pain does continue apply leeches in front of, or beneath, the ear, but never in the meatus or the concha.

Early in this condition often inflation of the tympanic cavity, gently done, will diminish the inward pressure by admitting air to the inner surface, and hence stop pain. This can be done by use of Politzer's or Valsalva's method. Valsalva's method is applicable only to adults; it consists in the patient holding his nose and forcing air into the naso-larynx and Eustachian tube. It takes nerve and determination often for a patient to do this; then use Politzer's method, which consists in letting the patient swallow a little water at command, and in that moment, as the anterior wall of the Eustachian tube is drawn away from the posterior, if the air-bag arranged for this purpose is squeezed while the nose-piece is in the naris, air enters the tympanic cavity. Instead of swallowing water, if the patient distends his cheeks with his breath, after the method of Holt, air can be just as easily thrown into the middle ear as when the patient swallows, and in many cases more conveniently and agreeably, especially in the case of children. Great care must be exercised to do this very gently in acute cases, or it may give pain. After the air-bag is emptied the surgeon must retain his grip on the hand-bag till the nose-piece is removed from the nose and washed, for should the air-bag be allowed to fill itself again while the nose-piece is in the nose, or even before it is washed, secretions from the nose will be drawn into it, to be thrown into some other nose, with all the risks of conveying sepsis.

The patient should speedily get well; if he does not, examine the membrana tympani with your forehead mirror, and incise it in the most congested spot, or in the posterior inferior quadrant, or possibly in both places; follow this by use of the Politzer bag.

From this condition remember that chronic catarrh starts, which is the most common cause of deafness.

Acute purulent otitis media often begins as an acute catarrhal inflammation, hence many of the remedies or measures I have quoted are excellent. Now an examination of membrana tympana shows a bulging of its surface generally low down. Perform paracentesis at this point. As pointed out by Burnett, a large portion of the blood supply of the membrana tympani comes from the tympanal branch of the internal carotid artery; this close connection with the large arterial trunk of the internal carotid renders the tympanal branch liable to a rapid augmentation of its supply of blood; also the nervi vasorum of the carotid plexus at this point in its course come largely from the otic ganglion. The third branch of the fifth nerve, supplying the diseased gums and teeth, also communicates with the otic ganglion, which makes a direct channel of nerve-communication, through the otic ganglion, between the irritating tooth or gum, and the blood supply of the membrana tympani. The effect of irritation in the teeth and gums, therefore, is to excite waves of vessel-dilatation in the membrana tympani.

After the discharge of pus has started the ear must be gently mopped with absorbed cotton often enough to ketp it clean and fairly dry; done gently and with due regard to the short auditory canal in children and the proximity of the drum-membrane to the meatus, and also to the sensitive nature of the cutaneous lining of the auditory canal and of the drum-head. Mopping is preferable to syringing, especially in children, but if the syringe is use let it be with plain, warm water, or warm water with a little salt in it (five grains to the fluid-ounce), or with a two-and-a-half per cent. solution of carbolic acid, or the ear may be syringed with a bichloride solution one to one thousand, or one to two thousand, as desired. But all syringing should be done by the physician. When all pain and soreness have disappeared insufflation of boric acid, alone or in combination with some other drug, will be of service, but in the more acute stages they are not well borne. Average cases of acute purulent otitis media will get well if properly treated; cleanliness and antisepsis being the sheet-anchor. It is even better to do nothing but clean the running ear with warm salt and water (five grains to the ounce), than to irritate it by scraping and poking at the ear, and mopping and dropping into it anything of a stimulating or irritant nature, for by such means many a case which would have gotten well has been turned into a chronic otorrhœa by meddlesome aural surgery.

It is necessary for the practitioner to be able to use the mirror and speculum in the diagnosis and treatment of aural disease, and also in ordinary clinical work; the necessary manipulations are not difficult, and are described in nearly all text-books on diseases of the ear, which show the appearances most commonly presented to the surgeon when a good light is reflected from a forehead mirror into an aural speculum properly placed in the external auditory canal. Microscopic examination of the pus in all acute middle-ear suppurations, especially in cases of influenza, is also excellent for diagnosis. If streptococci and staphylococci are present the involvement of the mastoid may be expected, and when the latter threatens the external operation should be performed at once. Phillip's thinks not more than twenty-four or thirty-six hours should be spent over such palliative measures as the ice-coil or hot douching of the ear.

Of course the decision to operate should not be made on the microscopical examination of the pus and blood only, but after studying the usual symptoms, pain, tenderness to pressure over the mastoid antrum, the temperature and the appearance of the drum membrane.

Funke, after a study, decides that there is no specific organism which produces otitis media; the organisms commonly found are in order of frequency: The pneumococcus, streptococcus, pyogenic staphylococci, and the bacillus of Friedlander. This authority speaks of a

definite grippal otitis due primarily to the influenza bacillus, which, however, becomes quickly associated with, or replaced by, other organisms. The bacillus diphtheriæ is more commonly present in otorrhœa than is generally believed. It may (*a*) be the initial infecting agent; (*b*) enter with the streptococcus or pneumococcus; or (*c*) be a secondary infection carried to the already infected ear by the fingers of the patient, or otherwise. The streptococcus infections are more grave than pure pneumococcus infections, but both are usually supplanted by the staphylococci sooner or later. Chronic suppurative otitis media is always polymicrobic, and remember that stubborn otitis media may be tuberculous.

Grimer comes to these conclusions in reference to tuberculosis in the ear: Advanced tuberculous changes may be present in the mucous membrane of the tympanum and of the tympanic membrane itself, without producing visible evidence through the external auditory meatus; the membrana propria of the drum-head offers marked resistance to tuberculous infiltration, and is only destroyed by a process of erosion; and this resistance accounts for the frequency of multiple perforations in tuberculous cases. Latent tuberculous naso-pharyngeal adenoids and all other latent foci must be excluded before deciding that any case of middle-ear tuberculosis is a primary affection. A high percentage of cases of suppurative otitis media with neighboring bone lesion in children under five years of age is tuberculous; in older persons only a small percentage is tuberculous. Intraperitoneal inoculation of guinea-pigs is a good and reliable method of proving the presence or absence of tuberculosis in granulations from the middle ear. Reliable proofs may also be obtained by examining microscopically such granulations, or even an enlarged mastoid gland, or naso-pharyngeal adenoid when present. In suppurative otitis media the absence of ear pain, early and extensive destruction of bone, early facial paralysis, multiple perforations, pale flabby granulations with caseous points in the meatus about a mastoid sinus, or in the mastoid antrum, and an enlarged mastoid gland, point strongly to the disease being tuberculous. The detection of bare bone through the meatus with a probe, the character of the discharge, facial paralysis, and extensive destruction of bone occurring as a late symptom, are of doubtful value in arriving at a diagnosis, while the presence of cholesteatomous masses is positively opposed to tubercles being present.

The Vapor Method of Anesthesia.—The stated meeting of the Medical Society of the County of New York was held at the Academy of Medicine, on Monday, September 25. Dr. James T. Gwathmey read a paper on "The Vapor Method of Anesthesia." He portrayed the evolution in the administration of anesthetics from the time when chloroform was given "powerfully and speedily," and when an unmeasured quantity of ether was poured into the open cone up to the present, when each drop of these powerful drugs is both measured and timed. Snow, Clover, Paul Bert, Junker followed in succession, and assisted in eliminating the unknown and placing anesthetics on a firm and solid basis. The Harcourt Chloroform Inhaler in England, the Braun Chloroform-Ether Inhaler in Germany, and the Gigliementi Oxygen-Chloroform Inhaler in France, represent the very latest contributions towards the accurate administration of anesthetics. The objection to the English and French inhalers is, that they are for chloroform alone, and use closed masks with valves. The Braun Inhaler is the best, but the mask was undesirable. Dr. Gwathmey then exhibited his own inhaler, the unique features of which are that chloroform or ether can be given singly or combined in any desired proportion; the ability to increase or decrease the air or oxygen without, at the same time, increasing or decreasing the anesthetic: the mask, an anatomically correct fitting face piece, the rim of which is hollow and perforated around the inner margin to allow the vapor to escape; otherwise identical with a folding Esmarch mask. This is covered with four layers of gauze, over which is placed a piece of oiled silk or rubber tissue. A small opening is cut in the middle of this gauze, so that, during the induction period, a few drops of chloroform may be added as with vigorous alcoholics. Dr. Gwathmey's Inhaler gives a maximum two per cent. chloroform vapor with a minimum of 1-10 per cent.

The inhaler, which is made by The Kny-Scheerer Company, consists of three ounce bottles, in each of which are four tubes, varying in length from one that reaches the bottom of the bottle to one that penetrates only the stopper. These tubes represent four degrees of vapor strength, the longest, with the mask just described, has an estimated one per cent. vapor strength; the shortest, No. 1, representing a very attenuated vapor, one-tenth per cent. As the mask is not air tight the vapor cannot be compressed, thus avoiding the danger of an overdose. The advantages of this form of anesthesia are:

1. A pleasant induction stage.
2. Stage of excitement absent.
3. Pulse and respiration normal. No mucus rale or billowy breathing.
4. Complete relaxation.
5. Absence of unpleasant after-effects on account of the attenuated vapor used.
6. The continued use of an attenuated oxygen or air and chloroform vapor known percentage, to which an attenuated ether vapor can be added or substituted when conditions require a change.
7. A possible change in the vapor percentage with the same flow of oxygen or air, by a change of tubes or by varying the pressure in the same tube, or by a combination of the two methods.

In the discussion following, Dr. John A. Bodine urged the desirability of overcoming the element of fear. Dr. Franz Toerck expressed himself as thoroughly satisfield with the method, having used it extensively. Dr. Wallace Lee said that he had often used this form of anesthesia, and had never seen a single case of nausea, or any other bad after-effects.

The Gopher is declared by Hemetson (*Med. News*, Oct. 28, '05) to be a possible substitute for the guinea-pig in laboratory experimentation. It is also extremely susceptible to tuberculosis, so that medical men in the gopher belt may have an additional aid in diagnosis of obscure cases. No doubt the happiness and satisfaction of these creatures would be greatly increased if they could know the extent to which the sacrifices they are called upon to make redound to the well-being of the human race.

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The future comes on slowly, the present flies like an arrow, the past stands forever still.—*Schiller.*

THE SEASON'S GREETINGS.

THE year has rolled around so rapidly that we had almost forgotten that it is the season to take account of stock and to enquire as to the condition of our professional assets.

It seems to us that in the main, the standing of the general practitioner in the community is improving, that the public begins to realize that it cannot get along without him, and that no number of specialists can supply his place.

There never was any doubt from our point of view, that the family physician should continue in charge of the case and he should decide as to assistance from the specialist as circumstances might warrant him in doing.

It has been a little difficult for the layman to understand the situation, but he is gradually doing so, and is turning back to his old friend, the family physician, as the one best fitted to conduct his case, practically holding a similar position to that of the family lawyer.

On the other hand, the family physician has learned to be more ready to ask the aid of the specialist when in doubt, in order to provide his patient with all possible means and skill should emergency require.

It will be a sad day, should it ever come, when the family physician is no more. The trained nurse cannot take his place, as has been suggested, and the specialist, no matter what his line, is not equal to it. The family physician, the specialist, and the trained nurse must go hand in hand if the best interests of the patient are to be considered.

The question of the relations between the profession and the manufacturer of drugs has excited much comment on both sides of the controversy during the last year. The profession generally declines to be used as a means of introducing remedies which sooner or later will be sold to the public. The manufacturer pretends not to understand why the physician will not prescribe his products, while the reason ought to be perfectly apparent. Much of the quackery of to-day is based upon professional endorsement of some kind, oftentimes improperly obtained. The profession cannot be too wary of giving its approval to any article subject to commercial methods. Medicines which are advertised directly to the public are not without risk if they possess any potency at all, and are not only injurious to the users, but to the profession, and their employment should be discouraged with all our might. The same medicine is not indicated in every case of a given disease, and the progressive physician is constantly on the alert to ascertain the symptoms which shall guide in the selection. It goes without saying that the layman is incompetent to prescribe for himself or any one else; but how ready he is to do it!

There are many compounds which are advertised only to the profession, the analyses of which are well-known, and which will never be sold to the public, that are worthy of our confidence and prescription.

A wise discrimination as to what may be advertised to the public, and still retain the confidence of the physician, should always be exercised. Simple drugs or compounds for internal use, in appreciable doses, should not be sold to the public and when they are, the profession should advise against such use in no uncertain language.

Instances of gross injury to individuals are constantly coming to light from the use of articles containing alcohol in some form, to say nothing of the deadly methylic.

We are glad to note that the U. S. Government has forbidden the sale of the nostrums containing alcohol to the Indians, and it would seem as if the prohibition States should work more actively along this line. The query naturally arises: "Where is the Women's Christian Temperance Union in this Crusade?"

There is no longer any need of going out of this country for post-graduate study, most of the larger cities providing for this work upon a high plane. Medical teaching in all branches has been greatly improved in the last decade, the object being to overcome empiricism as far as possible and establish exact law in the practice of medicine as in other Arts and Sciences.

The majority of the profession in this State may be congratulated upon the legal consolidation of its two societies into one. The union is in time for the celebration of the one hundredth anniversary of the foundation of the Medical Society of the State, which takes places this year. It is to be regretted that this society does not include all legal practitioners in the State.

The country has been recently shocked and disgraced by the killing of a midshipman at Annapolis. The report says it was caused by "successive fist blows on the left side of the head," as testified to by the medical officers in charge. The code of honor has thus been

vindicated in the death of a midshipman! The court-martial in the above case has hardly finished its work, when the results of a brutal hazing in the same institution comes to light. It looks as if Secretary Bonaparte intends to put a stop to these outrageous doings at the nation's expense. It is useless to say that it cannot be done, as some claim.

The great number of accidents and deaths from foot-ball the past year, is bringing people to their senses in respect to the brutality of the game as at present played. There seems to be some difficulty in placing the responsibility for the authorization of the game, and we would suggest that the grand jury would soon find this out.

There is a vast amount of progressive work being done along many lines, both medical and surgical, some of which will be of immense advantage to the public as well as to the profession.

In conclusion, we have every reason to congratulate the profession upon the outlook as it appears to us. In extending the compliments of the season to our readers, we desire to extend thanks for past courtesies and to assure them of our cordial best wishes for the future.

THE MEDICAL SIDE OF INSURANCE MANAGEMENT.

THE American people are in the luxuries and discomfort of a gigantic housecleaning. Investigations are in the air; everything must be examined and disapproved, whichever way the evidence points. Even the *Ladies' Home Journal* must have a mild exposure; for here comes Mrs. Rorer, the famous cook, with an exposé of college cooking and its inadequacies.

These movements are excellent in their ideas and generally in their results; their disadvantages are that it is generally impossible to check such probes within the realms of reason, for the American people are apt to rush to extremes, and the general distrust and unrest which pervades business and social circles. It is only nceessary now to mention a name in connection with an investigation and it is damned by the public without further ado or evidence.

The question of a national hysteria is a most interesting problem for sociologists to discuss. We saw it displayed in the case of Dewey. He sailed into an unknown harbor and destroyed a few tenth-rate vessels. At once the American public raised him to the seventh heaven; he was treated almost as of divine origin; the country simply went crazy over him and his doings. No attempt was made to estimate his real worth and the actual value of his performances. Such movements must be followed by reaction, and the American people began to look around unconsciously for some crow-bar to wrench Dewey off his pedestal. There is no trouble to find cause for criticism if we want to find it, and the people unhorsed the Admiral almost as quickly as it raised him. It did this simply because the hysteria had passed away and the people came to their sober senses. So the unfortunate Dewey, instead of being placed in his proper niche and kept there, was elevated like a demi-god and then trampled underfoot.

It is a terribly serious matter to attract national attention, either favorable or unfavorable, from this great mass of conglomerate minds which we call the American people.

So it is with the insurance examination in this city. The public have momentarily damned all insurance companies; companies that are not being examined or are free from defects feel the slump as much as the companies being criticized—and in it all and through it all, no mention is made of the integrity of the medical departments of the various companies. Underpaid in the most extravagant company and unappreciated, the medical examiners and directors have performed their work, thoroughly, conscientiously and beyond criticism. Yet putting the listening ear to the trembling air, we hear no chorus of praise to the faithful physicians in their positions of trust. The only words that come along the line are commands from the companies' officers to cut down the medical expense alerady down to the bone.

It would be interesting for the Legislative Committee to call the medical directors of the various companies and ascertain their pay. It would be found so meagre that even in companies with one-hundred-thousand-dollar salaries it would be laughable, were it not pitiful. These medical directors control the life-blood of the companies. Their work is the heart, the body, and the soul of the companies' existence, and yet these men, intelligent, skilled and honest, are frequently forced to take practice to keep up their homes in proportion to the dignity of their positions.

When it comes to the examiner, the companies scarcely consider him at all. Even the select few who devote their entire time to examining, find it hard picking. For example, the principal examiner of a principal company in a metropolitan city stated recently, "I sat in a man's office for an hour waiting to examine him for a ten-thousand-dollar policy. He looked healthy and would have passed the inspection of the company as to his business and social standing. But I found a systolic murmur in his heart region, and I believe that that man will scarcely live ten years. I saved my company ten thousand dollars, for which I get the munificent pay of two dollars," and this company is being criticized for its extravagance of management. Surely it is not in the medical department.

Some day on that brighter shore we suppose the doctor will come into his reward. But here we see but little of it. The physician is expected to be honest, efficient and omniscient and live on the clear, pure air which surrounds him.

BRIGHT'S DISEASE.

THE relation of the kidneys to the circulatory system and to the organism in general was perhaps the most important subject of discussion at the Portland meeting of the American Medical Association. The trend of thought here manifested was in general conformity with that evinced in the best European medical organizations. There was a radical departure from old-time views. It was declared there may be circumstances under which albumin and casts may appear in the urine without necessarily being an indication of Bright's; and on the other hand, the kidneys may be markedly involved without any manifestation of casts and albumin. The important point was made that a urinary analysis alone does not suffice for a diagnosis of nephritis; all the symptoms which the patient suffers must be taken into consideration. At all times the heart and the arteries are essential factors; and oftentimes interstitial nephritis is rather a local lesion of arteriosclerosis than an original nephritis.

Another consideration, and a wise one, we think, is that kidney conditions should be distinguished on a clinical rather than on a pathological basis. Two important factors were considered with relation to treatment: In chronic Bright's too much liquid must not be advised, as this only overworks the heart without adequate compensating advantage; here, moreover, the nutrition must be maintained. On the other hand, acute nephritis requires starvation, by which means the kidney is given as complete rest as may be; this consideration should hold also in the acute exacerbations of chronic nephritis. Here much judgment is required.

Among important individual opinions was that of Councilman, who found hypertrophy of the heart in seventy-six out of eighty cases of chronic interstitial nephritis. Cabot declared that kidney disease was always a part and never a whole; it was one lesion of a general infectious or toxic process. Stengel declared that albuminuria and the presence of tube casts were common occurrences in various general diseases—gout, diabetes, tuberculosis, syphilis, cystitis, pyelitis, heart and arterial diseases—as well as in nephritis. Shattuck stated the leading principles in the dietetic treatment of nephritis to be: such control as we have of this disease lies in diet and mode of life rather than in drugs; the drugs which are useful are so because of their effect on the heart or on the general organism rather than on the kidneys directly; the kidneys should be spared unnecessary work; in acute nephritis, as well as in acute exacerbations of the chronic forms restricted diet and rest should be essentials of good management; in chronic forms the aim (often attained) should be to lengthen life. "Especially in the contracted form of kidney disease many years of life, much of the happiness which comes from achievement, days and nights of comfort," might hinge on our skill in adapting sound principles to the particular case and in securing the unwavering cooperation of the patient. Dietary restriction should be quantitative rather than qualitative; diet should be varied and not monotonous. Alcohol is not necessarily a poison and might be an aid to digestion. The excess of proteid, not proteid in itself, is harmful in chronic Bright's. Witherspoon has through a number of years been much impressed with the reparative and recuperative powers of the kidneys. Unfavorable diagnoses have indeed much too often been made; and not a few physicians have had the mortification to see their cases of Bright's which "would not live two years" confront them in very good health decades after the time confidently set for their demise. Hutchinson believed that any diet which diminished the amount of intoxication in the tissue's and built up the patient's strength was best fitted for cases of nephritis. Walsh directed attention to high tension pulse, accentuated second heart sound, fluttering sensations, referred to the heart and digestive disturbances, with relation to the diagnosis of nephritis. Fussell sensibly declared that the impression should not be advanced that the physician need not examine the urine at all in cases of suspected kidney disease; such examination should be made and considered in relation to all the other symptoms.

SURGICAL TUBERCULOSIS.

THE treatment of tubercular lesions other than pulmonary has of late years undergone a radical change—particularly with regard to the tubercular glands, "white swellings" of joints and the like, in children. No operation is now considered radical; it is recognized that a new nidus of infection will inevitably arise in some other part of the organism, if operation be not immediately re-inforced by dietetic and hygienic treatment, the latter being of a particularly revolutionary sort. Indeed, it has been made manifest in the French Hôpitals for tuberculous children, in the institution at Sea Breeze on Coney Island (which is modeled after these hospitals), by the work done in the Seaside Hospital of the St. John's Guild at New Dorp, and in many other institutions of a like nature, that children get well of their lesions without operation, and oftentimes with more permanent results. Relapses are extremely rare. At Sea Breeze, for instance, the windows are never closed, no matter how low the temperature, either day or night, except for a half hour morning and evening, when the children dress and undress. Yet colds, or sore throats, or pneumonias, or the acute infections common among children, are there practically unknown. And by this hygienic mode of treatment the disfiguring scars which follow the use of the knife, are oftentimes obviated. And it has been found also that when operation is inevitable, the healing is much more rapid than

was formerly the case with these torpid, sluggish lesions.

That the tuberculosis of children is generally non-pulmonary has recently been much emphasized. Freeman (*Medical News*, May 27, '05) recognizes two modes of infection—respiratory and alimentary; the comparative frequency of these two modes has not yet been definitely determined. We would emphasize here what appears to us to be the modern trend of thought with regard to inhalation tuberculosis—that the bacilli are generally not inhaled directly into the air-vesicles, but that the tonsils and the pharyngeal and bronchial lymph-glands first receive the infection, which is then carried by the lymph channels to the air-vesicles by way of the thoracic duct, the vena cava, the right heart, and finally the afferent pulmonary capillaries. And this we believe to be the true modus of inhalation tuberculosis.

Freeman points out that the tuberculosis of early life is most common during the first year, when children are on an exclusive milk diet. A great deal of milk contains tubercle bacilli; and bovine tubercle bacilli are undoubtedly pathogenic for the human animal. At the tender age referred to, the structure of the intestinal wall is extremely delicate, so that bacteria can pass through it even though it be uninjured. Inoculation experiments prove that the mesenteric lymph nodes may be tuberculous without the presence of any gross lesions in them. The tuberculosis of infancy is, indeed (unlike that of later life), an acute, widely disseminated, general disease, with moderate temperature and few symptoms and physical signs, unless the invasion of the meninges gives rise to symptoms. Cervical lymph nodes and lesions of the joints are rarely seen before the third year. The power to overcome a tuberculous infection that has spread from the lymphatics and invaded the organs does not seem to exist in infancy. And the best treatment, as we have noted, is dietetic and hygienic—milk as pure as can be had, Pasteurized wherever there is any question of the good quality; and fresh air and sunshine through all temperatures.

THE DANGERS OF ILLUMINATING GAS.

ILLUMINATING gas has become of very general use, especially among the poor. It is now not only the poor man's light, but it warms his home, and it cooks his food as well. It is, therefore, nearly cause for wonder that comparatively few deaths are attributable to the careless use of it. Formerly the danger was not so great, for it was "coal gas," and the characteristic odor was a danger signal. But the modern "water gas," which has so largely replaced it, with its larger content of carbon monoxide, and its comparative lack of odor, is far more dangerous. Leffmann (*Journal A. M. A.*, June 3) finds that carbolic acid and illuminating gas have replaced, in Philadelphia at least, the suicides and accidental poisonings, the arsenic and laudanum of the Civil War period. A very small percentage of carbon monoxide—less than one-half a grain to 100 c.c. of blood—can render useless its hæmoglobin; so that a sleeper can easily absorb a fatal amount of modern water gas without being aroused. Gas cooking stoves are used generally only in warm weather, when there is good, natural ventilation; but their burners are seldom furnished with a collar to regulate the air supply, and the combustion is therefore liable to be irregular, and deleterious gases are given out. There is often serious leakage from the tubing, unless the best material is used. The stopcock on the heater is especially objectionable, being the one most convenient to use; and when used the leakage through the tube can go on unchecked. Leffmann advises that the sale of inferior tubing be prevented; that there should be no stopcocks on heaters unless they are connected to house mains by metal pipes, with tight joints and such construction as will prevent the rubber tube, even when of the best quality, remaining in free connection with the house main when the gas is not lighted. Heaters should be so constructed as to give a large radiator effect with a given gas consumption; and they should be placed only where the products of combustion can escape freely from the chimney. All burners on the Bunsen principle should be provided with collars to regulate the air supply, and purchasers should be instructed in their use.

BY-PRODUCTS OF BEEF.

THE modern tendency to organize any given industry down to its minutest detail (whether for better or for worse, we will not here speculate) has been strikingly emphasized in the recent report of Commissioner Garfield concerning the Beef Industry. This document evidences an extraordinary economy practiced in the saving and utilization of every part of a slaughtered steer.

When this business first became established on a large scale independent plants grew up in its vicinity; and it was their function to handle the by-products collected from the packing houses. Thus were glue, fertilizer, soap, oil and tallow works separate from the slaughtering concerns. As the packing business became more concentrated in the hands of a few large companies, all these allied industries were taken over, with the result that various important economies were effected. For an example of the point of detail that has been reached, the Armour Company now manufactures sandpaper, thus utilizing its glue.

The hides are the most valuable by-product of beef, averaging about six dollars a head. Many classes and

grades are distinguished; they are salted and kept for from two to six months, according to the state of the market. The hides may thus shrink in weight as much as one-sixth of the "green" weight.

The fats, especially from the abdominal region, provide a large revenue. The better fats, which may be detached by cutting or pulling, are so largely destined to be used as a constituent of butterine that they are known as butter fats; an average beef animal will yield from sixty to seventy-five pounds of such fat. Oleo stock is first derived by heating from these fats. This is nearly of the same substance as ordinary prime tallow; and if the market for oleo products is much depressed, tallow may be produced for sale instead. Otherwise the stock is subjected to powerful pressure, which separates the oleo oil from the stearin, both of which are standard marketable products. Some packers use part of their oleo oil and stearin in manufacturing butterine, lard compounds and cooking oils.

The Commissioner rather naïvely reports that a moderate quantity of tallow and greese, of several grades, is secured by cooking the heads, feet and other offal, "but the quantity and value of fats of this character are much less than those of butter fats."

The tongue of a beef animal is a valuable by-product; it is sold either fresh, or more often cured or canned. All parts of cattle, except the dressed beef, hides, butter fats and tongues, are ordinarily designated as "offal"; in this term are included the liver, heart, sweet breads and tails, which may be marketed without other treatment than trimming. Other forms of offal require much more extensive preparation for satisfactory marketing. From the heads are cut the cheek meats and other small bits, and sometimes the lips; these are usually sent to the sausage department. Parts of the horns and big bones may be used in the manufacture of various novelties. The feet, the trimmed heads and various minor parts are transformed into tallow, glue, neatsfoot oil, and other products; the residue from these is used for fertilizer, as are also the blood and soft parts not containing other valuable material. A great variety of commercial fertilizers are made, including those in which phosphates and other mineral substances are combined with the animal products. The intestines are carefully cleansed and converted into casings for sausages. The weasand, or gullet, and the bladder are made into containers for various commodities; some weasands are used for packing snuff.

Fibromata in three sisters, all single, in age between thirty and forty years, are reported by Doran (*Brit. Med. Jour.,* Oct. 14, 1905), who did a hysterectomy in each case. The growths were of the same type, interstitial, subserous and submucous. In all the cervix was involved and displaced.

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Manual of Chemistry. A guide to lectures and laboratory for beginners in chemistry. A text-book specially adapted for students of medicine, pharmacy, and dentistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, and in the Baltimore College of Dental Surgery, etc. Eighth edition, thoroughly revised with sixty-six illustrations, one colored spectra plate and eight colored plates, representing sixty-four chemical reactions. Philadelphia and New York: Lea Brothers & Co. 1905. Pp. 643, octavo.

This standard text-book for students comes to us with the changes and additions of the new Pharmacopœia included, bringing the work absolutely up to date by thorough revision and re-writing.

The illustrations have been improved and increased. The book furnishes in concise form a clear presentation of the science, an intelligent discussion of those substances which are of interest, and a reliable guide to laboratory work. As an aid to laboratory work, a number of experiments have been added which may readily be performed by students with a comparatively small outfit of chemical apparatus.

The work will continue to be a leading text-book.

Operative Surgery.—For Students and Practitioners. By John J. McGrath, M.D., Professor of Surgical Anatomy and Operative Surgery at the New York Post-Graduate Medical School, Surgeon to the Harlem, Post-Graduate, and Columbus Hospitals, New York. Second edition, thoroughly revised. With 265 illustrations, including many full-page plates in colors and half-tone. 628 Royal octavo pages, extra cloth, $4.50, net; half-morocco, $5.50, net. Sold only by subscription. Philadelphia: F. A. Davis Company.

This excellent treatise appears in a second edition after having been carefully and thoroughly revised. Many instructive illustrations and much new and interesting descriptive matter have been added. In the section upon the abdomen the subjects of gastro-enterostomy and the surgical treatment of diseases of the stomach and intestines have been treated in minute detail.

The operative surgery of various other organs has also been described at length in the revision, greatly to the enhancement of the usefulness of the work.

The author has attempted in this volume to combine in a practical manner the subjects of surgical anatomy and operative surgery, because a knowledge of the one is essential to the proper study of the other.

A Manual of Surgical Diagnosis.—For Students and Practitioners. By Albert A. Berg, M.D., Adjunct Attending Surgeon to Mt. Sinai Hospital, New York. In one 12mo volume of 543 pages with 215 engravings and 21 full-page plates. Cloth, $3.25, net. Philadelphia and New York: Lea Brothers & Company.

The author by environment and experience is thoroughly competent to write such a work. The text is complete, precise and admirably adapted to the needs of the student and the practitioner. A concise clinical picture of each disease, including its cause, onset and course, and in certain cases the accompanying pathological changes are given. In each instance there is

indicated the points of difference between the disease under discussion and other diseases which might be mistaken for it. The author has endeavored to cover the whole subject concisely and in its most modern development.

A Manual of Pathogenic Micro-Organisms, including Bacteria and Protozoa.—For Students and Practitioners of Medicine and Surgery and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, and Director of the Research Laboratory of the Department of Health, New York. New (2d) edition, enlarged and thoroughly revised. In one octavo volume of 556 pages, with 165 engravings and 4 full-page plates in black and colors. Cloth, $3.75, net. Philadelphia and New York: Lea Brothers & Company.

In view of the fact that the two classes of pathogenic micro-organisms, bacteria and protozoa, are now recognized, it is essential that the student should be instructed in both fields, hence the inclusion of the two subjects in a single volume is advisable. The sections on bacteriology have been thoroughly revised and brought up to date; those upon the protozoa are entirely new so that the complete volume reflects the latest knowledge in its whole domain. Throughout this new edition, as in the previous one, the practical side of the subject is kept uppermost and the needs of the student, the practicising physician and surgeon as well as the health officer are kept constantly in mind.

Minor and Operative Surgery, including Bandaging. By Henry R. Wharton, M.D., Professor of Clinical Surgery in the Woman's College; Surgeon to the Presbyterian Hospital, Philadelphia, etc. New (6th) edition, enlarged and thoroughly revised. In one 12mo volume of 642 pages, with 532 illustrations. Cloth, $3.00, net. Philadelphia and New York: Lea Brothers & Company, 1905.

This work has for many years been the justly accepted authority in its field. In its many revisions its scope has been gradually broadened in response to the suggestions of its many readers, so that in the present edition it really covers all except what might be termed capital surgery. The increased attention which is given in the medical colleges to operative procedures on the cadaver and the importance of this method of instruction have led the author to include those operations which can be advantageously taught in this way. The various bandages and surgical dressings are clearly described, and illustrated by numerous engravings, many of which are photographic, and all of which are most helpful.

A Manual of Physical Diagnosis, including Diseases of the Thoracic and Abdominal Organs.—For Students and Physicians. By Egbert LeFevre, M.D., Professor of Clinical Medicine and Therapeutics in the University and Bellevue Hospital Medical College, Attending Physician to Bellevue Hospital and St. Luke's Hospital, New York. New (2d) edition, thoroughly revised and much enlarged. In one 12mo volume of 479 pages with 102 engravings and 6 full-page plates in black and colors. Cloth, $2.25, net. Philadelphia and New York: Lea Brothers & Co.

The second edition of this work has been thoroughly revised, some of the sections entirely rewritten, the series of illustrations enriched, and attention has been called to recent modifications in methods of examination. The scope of the work has been kept to its title, including the subjects of inspection, palpation, percussion and auscultation.

Noteworthy among the new features of this edition are the very complete revision of the chapter on topographical and relational anatomy and the new illustrations in this portion of the book—the new X-ray illustrations of the heart outlines and the new illustrations of cases of cardiac disease. The first edition of Dr. LeFevre's work was repeatedly commended as "the best manual procurable on its subject," but the present would seem to require even stronger recommendation.

A Text-Book of Medical Practice for Practitioners and Students.—Edited by William Bain, M.D., Durh., M.R.C.P. Lond. With illustrations. Large octavo, pp. 1011. London and New York: Longmans, Green & Co.

This unique classical work, written by sixteen authors, specially selected for their subjects, presents the salient facts of medical practice within the compass of a single volume. A new feature of the scheme is the inclusion of anatomy, histology and physiology, prefatory to the consideration of various groups of diseases. This innovation will recall to the student the importance of keeping normal conditions in mind. To emphasize further the relation of the abnormal to the normal, morbid anatomy and pathology are, in the description of individual diseases, placed before clinical symptoms. The final chapter deals broadly with the inter-relation of organs in disease.

In accordance with the general plan of the work, certain diseases, including pneumonia and acute rheumatism, are found in the sections dealing with the organ or region chiefly involved. The text is written in a fascinating style, which is easy to read and a pleasure to study. Our readers will find the book a delight.

Progressive Medicine.—A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, M.D. and H. R. M. Landis, M.D. Vol. IV, December, 1905. Philadelphia and New York: Lea Brothers & Co.

In this volume the following subjects are considered: diseases of the digestive tract and allied organs; liver, pancreas, and peritoneum; anæsthetics, fractures, dislocations, amputations, surgery of the extremities and orthopedics; genito-urinary diseases; diseases of the kidneys; practical therapeutic referendum. All the matter is of the highest practical value to the busy practitioner, the article on therapeutics being well worth the price of the book. We cannot commend this work too highly.

Sexual Neurasthenia, Its Hygiene, Causes, Symptoms and Treatment, with a Chapter on Diet for the Nervous.—By George M. Beard, A.M., M.D., formerly lecturer on Nervous Diseases in the University of the City of New York, etc. Edited, with notes and additions, by A. D. Rockwell, A. M., M.D., Neurologist and Electro-Therapeutist to the Flushing Hospital, formerly Professor of Electro-Therapeutics in the N. Y. Post-Graduate Medical School and Hospital, etc. Sixth edition. With formulas. Pp. 316, 12mo. $2.00. New York: E. B. Treat & Co. 1905.

The demand for a sixth edition of this work shows

the esteem in which the profession holds it. The editor has taken this opportunity to direct attention to the symptom of incontinence of urine in its relation to neurasthenia, and to describe a method of treatment which has yielded remarkably good results in his experience. The treatment consists of the action of the isolated induction shock on the atonic perineal striated muscles and the external sphincter of the urethra, and a description of the technique is given as the main feature of the additional chapter.

Lectures on Auto-Intoxication in Disease; or, Self-Poisoning of the Individual.—By Ch. Bouchard, Professor of Pathology and Therapeutics; Member of the Academy of Medicine and Physician to the Hospitals, Paris. Translated, with a preface and new chapters added, by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, New Castle-upon-Tyne; formerly Examiner in Medicine, Royal College of Physicians, London. Second revised edition. Crown octavo, 342 pages, extra cloth. Price, $2.00, net. Philadelphia: F. A. Davis Co.

As putrefactive action in the intestinal canal and the development of physiological and pathological alkaloids play an important part in many disease processes of every-day interest, this volume, which deals practically with the subject of "Auto-Intoxication," cannot fail to be of interest and prove instructive to the general practitioner, who is constantly coming in contact with such conditions. There is also much that is valuable and suggestive from a therapeutical point of view. In this edition, the editor has interposed in the text, valuable matter in order to bring the subject to date.

Immunity in Infective Diseases. By Élie Metchnikoff, foreign member of the Royal Society of London, Professor at the Pasteur Institute, Paris. Translated from the French by Francis G. Binnie, of the Pathological Department, University of Cambridge. With 45 figures in the text. New York: The Macmillan Company. Pp. 591, octavo. Price, $5.25.

This volume sums up the efforts of twenty-five years of hard labor on its subject, by the distinguished author. The writer has attempted to give a general picture of the phenomena of immunity in the infective diseases, in order to clear away certain misunderstandings which he claims exist in respect to the subject. There is no one better equipped than the author to do this work, and it is now up to the opponents of the phagocytic theory to disprove his statements. The text will be found both interesting and fascinating, and no physician should fail to read the book regardless of personal belief or prejudice.

If one does not care to read the whole there is an excellent summary in the last chapter.

Vital Questions. By Henry Dwight Chapin, M.D. New York: Thomas Y. Crowell & Company. Pp. 200, 12mo, cloth, $1.00.

The author takes for consideration such subjects as "Poverty," "The Child," "Health," "Education" and "Success," discussing them in the plainest terms for the sole purpose of finding the underlying truth for his readers, professional or lay. A portion of some of the articles have appeared before in periodical literature. It is a suitable book to recommend to patients.

CORRESPONDENCE

DO MEDICAMENTS CURE?

To the Editor of THE MEDICAL TIMES:

Such a question as heads the present letter would to the vast majority of persons seem not only preposterous but superfluous. For whence proceed the great floods of medical literature; the thousand and one drugs already discovered, and those continually put upon the market in a never-ending stream, and burdening the repleted pages of the Pharmacopœia; the various so-called schools of medicine founded for the express purpose of proving the claims of special therapeutic methods? Add to this the six and more thousand medical practitioners graduated from the various medical institutions of the United States alone, not to speak of other countries; the numberless self-constituted physicians; the hosts of dabblers in physic and the venders in secret nostrums, as countless as the sands of the seashore. What of them? In the face of all this positive and emphatic testimony in favor of drugging, who will have the temerity to adduce a negative vote? Who dare meet this vast array of argument?

From the remotest antiquity the medical profession has been held in the highest regard. Honors of various kinds, wealth and renown have been lavished upon the good physician with unsparing hand. In the rich mythology of the Greeks we find Esculapius occupying an exalted position and, as the alleged son of Apollo, receiving the honors of a god; while his worship was continued to a later date among the Romans. In fact, the first medical schools in existence honored him by taking his name; for the medical schools of Cos, under the name of Asclepiadæ, were famous the world over. And even in our own day, the name of Esculapius is synonymous with that of a medical practitioner. Such influence has the early practice of medicine retained!

Nor has the medical profession undeserved this high tribute of praise and affection. For among its members it has numbered some of the noblest characters the world has ever seen. By their discoveries and achievements in their own and kindred sciences they have ameliorated the conditions of mankind to an unparalleled degree. The self-sacrifices of the physician in war, pestilence and other human miseries are without number, as the literature of all nations clearly evinces. His self-abnegation in moments, when the first impulse would be an impulse of self-preservation, needs no illustration here. The names of such physicians are legion: some whose names have been entered in the book of fame; some whose activities flowed in calmer channels and in a more humble sphere of life, but whose memories are enshrined in the hearts of a grateful posterity.

But despite of all his accumulated honors and emoluments, the profession of medicine has perhaps more than any other occupation, but too often been misunderstood, or at least, misjudged. Its true and prescribed functions have been the occasion of great misapprehension. When it seemed to work wonders, miracles were demanded. When it failed to satisfy the importunate longings of suffering humanity, it was put on a level with the veriest tyro. Hence, on the one hand, sprang up the most deplorable delusions and fanciful doctrines; on the other, the most unblushing effrontery and barefaced charlatanism. Confusion worse confused was the inevitable result; alternate affirmations and denials of

rival sectaries as to the superiority or inferiority of their respective systems. The nature and cure of a malady were dependent upon vague and occult principles, too subtile but for the initiated to comprehend; in short, such a farrago of nonsensical and mercenary doctrines, that, in the endeavor to choose the best, men were fain to select the most pretentious—and the worst. The whole legitimate profession received the odium of which they were entirely undeserving; and, as a matter of course, upon its shoulders was laid the whole ill success of the medical art.

There is something like a Gresham law, as active in the medical as in the financial world. When medical credit wanes, its true province, like good money, tends to disappear and leave nothing but a base substitute in its place. The old confidence in it is lost; business is done with a constantly fluctuating and depreciating currency. He who makes the best promises and the most, who gives the greatest credit with the most alleged beneficial intentions, is the one who, in panicky times, is to reap the largest harvest and win the votes of the community. The wrong cause is always the one to which the difficulty is ascribed.

Now when we consider the changes in the popular mind which are constantly taking place around us in regard to the true action of medicaments, we are naturally inclined to learn the reason for all such changes, if reason there is. Two questions in this connection not unnaturally arise. Does the medical profession justify its claims to the cure of disease and the preservation of the health? And, on the other hand, does the public demand impossibilities of its medical advisers? Or, again, are the physicians themselves holding out the boon of health for their own profit, by deluding humanity into the belief of the employment of drugs irrespective of their necessity and prosperity? Do the afflicted still imagine that the day of miracles is not over, and still look to the profession for their performance? Shall the profession be accused of unscrupulousness or the laity of ignorance and superstitution? Let us endeavor to explain some of this misunderstanding.

Much, if not all of the misunderstanding and heartburnings, produced by the discussion of a disputed question, might be avoided if the disputants did but agree upon the meaning of the terms to be employed in the proposed argument. Socrates, the father of moral philosophy, laid particular stress upon the definitions of words. According to him every argument hinged on the accepted significations of the verbal terms to be used. Thus were he discussing the subject of bravery or of cowardice with his pupils, he would first distinctly make known to them what he meant by the term bravery or cowardice, as the case might be. In this way he was the better prepared to enter upon the question as to what was meant by a brave man or a coward. When this was determined to his satisfaction he was ready to take up the discussion. If a similar precaution should be taken in the discussion of medical as well as of other matters, how much time, labor, misunderstanding and bitterness might be saved! Therefore, at the outset, we shall endeavor to define as explicitly as possible the meaning of the word which has been so often misunderstood and set all too often the laity and the medical profession at odds. For the great bone of contention appears to lie in signification of the word "cure."

Every nation almost, it would seem, has, fortunately or unfortunately, made contributions from the remotest antiquity to the English tongue, even forcing out of currency many old native, Anglo-Saxon words which lay at the foundation of the language. Hence we possess an abundance of words of both Greek and Latin origin, introduced directly from that source, or indirectly through French dilutions. In this way the language has lost many useful words of native growth beyond hope of redemption. Among such words may be noted "leach" and "leachcraft," very expressive but now obsolete. In their place we have a number of equivalents none of which convey the picturesque force of the first.

And first of Greek equivalents. This ancient language gives us "Physician," "Physic" (noun and verb); then "Chirurgeon," contracted to "Surgeon," with its derivatives, surgery, surgical, etc.; next "Apothecary," "Therapeutics," with its derivatives; "Pharmacy," and its derivatives and several other which need not detain us here. The original meaning of the first word was what we now understand as "physicist," or one who professes to teach "physics," which last term, in the singular number denotes medicine proper. The same thing, to some degree, may be instanced in the case of the word "Chirurgeon" before it was corrupted to "surgeon." Originally in the Greek it had no other meaning than that of "craftsman," or, more properly, "handcraftsman." It was not until the time of Celsus, in the first century of our era, that it received its modern designation. "Apothecary," "Therapeutics," and so on, are words which from the first had some connection with the preparation, sale, dispensing and administration of drugs for the treatment of disease, except the first. For "Apothecary," on the other hand, came down to us with a different signification from that first applied to the word, when introduced into the language. With us it is employed in its secondary meaning of the dispenser of drugs and medicines; while the English apply it to a general practitioner who dispenses his own medicines. In its last and third application the word has departed the widest from its original meaning. In its primary force it conveys no hint of its most extended use. For the original apothecary was only one who kept a shop (theca), and vended spices, nutmegs and other commodities as well as drugs; and down to the beginning of the seventeenth century he belonged to the Company of Pepperers, or Grocers.

From the Latin we have drawn our word "Doctor," as applied to the physician almost exclusively, which, in its original application, referred to one skilled or learned in the higher professions, particularly in law and theology. Thus the profession of medicine is not the only vocation to which this term may be applied as modern usage still shows. As ordinarily used the term has come to be thus applied only by association. Another word by a similar course of association and other causes has almost lost its primitive force. I refer to "Undertaker," which has been for nearly two centuries restricted to a manager or conductor of a funeral. In its primary sense it denoted the promoter, manager, exploiter of any kind of business—the French "Entrepreneur." Thus "doctor," in its popular employment, has been entirely divorced from its original meaning; and we even have coined a verb from it, "to doctor,"—and "doctoring," also.

We now come to a class of words which have brought over with them into the language something of their

primary signification. From the root of the Latin word "to heal" (*mederi*), have been formed a variety of other terms, both in Latin and their English adoptions, all of which relate to the healing art (*leachcraft*). Such are "medical," "medicine," "medicament," etc.; "remedy," "remedial," etc. Our language, however, has not adopted the derivative which particularly relates to the practitioner of the healing art, namely, "medicus," though the Latin races have done so. The abbreviations appended to a medical degree, namely, "M.D.," are pure Latin, and only used to designate a physician in a somewhat undignified manner.

The French in this particular are peculiarly fortunate. Their tongue being an offshoot of the Romanic language (Lingua Romana) the body and soul of its speech is consequently of Latin origin. Most of the terms relating to the medical profession have come to them from the mother tongue, the prevailing language of the Roman Empire. And among these words may be mentioned "cure," susceptible of two meanings, primary and secondary. In its original application it denoted the charge or care of anything, whether in a theological, medical or ordinary sense. In the first two senses it is used in France; chiefly in the second meaning in England; and only in its second application with us. But through all its meanings the notion of care, attention and general superintendence runs; not the strict use of remedial drugs. In "Curate," we note one who has under his charge the care (*cura*), or the "cure" of souls; a spiritual supervision over parishioners. In its application to the treatment of disease the physician becomes one who has under his charge persons whose health needs restoration not necessarily by means of drugs—a secondary consideration. It is this misapprehension of the word which has caused ite confusion with merely medical treatment by means of drugs. This is the popular interpretation of the word; and a physician is expected to perform a miracle virtually by means of certain remedies used in a certain way, the more mysterious the better. In the case of surgery and in a limited number of maladies there is some certain connection between the application of the remedy and the recovery of the diseased. The number of specific remedies are in actual use so small that they may be thrown out of the discussion altogether. The best class of such medicines are known as antidotes to poisons; and even those are limited in number.

On leaving the domain of surgery and that of the few well-recognized *"post-hoc"* remedies, so to speak, our troubles begin. The word "cure" is tortured far beyond its capabilities, and made to play a rôle as little comporting with its first meaning as possible. The double application of this word is extremely unfortunate on account of the part it has been made to play in the domain of medicine where the nicest exactness in the use of language is so much needed. Though a certain degree of care is always necessary in the treatment of a malady, it does not follow for that reason that all diseases are amenable to direct medication. Such a result might not be possible. It is this miraculous element, so to speak, connected by the popular mind with the treatment of disorders which it is not our purpose to consider in the present paper, but to consider upon what depend the true duties of a physician apart from this gratuitous attribution to him of miraculous powers.

In his history of medicine, when discussing the several methods used in the treatment of disease, therapeutic and otherwise, Renouard divides them into three classes, as follows: first, the synthetic specific or curative method proper; the analytic or symptomatic; and lastly, the inactive or expectant—the French *laisser-faire*.

According to the first method it is the aim of the physician, if he can, to cut short the malady by medical interference—the aim of the leach from time immemorial. The search for the elixir of life is coeval with that after the philosopher's stone. To obtain some infallible remedy for a given malady has been the object of pursuit from the dawn of civilization. And it is this which the layman always demands from his physician; and "dosing" constitutes the course of treatment that he expects without fail from his medical adviser. The accommodating physician cudgels his brains for specifics which are slow in responding. It is this insatiable thirst after specifics which constitutes the bane of the practice, and keeps ever full the ranks of charlatanism.

The second method merely appertains to the grouping of the symptoms of a disease, and treating each one separately in the same manner as was noted above, with the same hope of success by medication.

The third method of treatment carries with it the acknowledgement of the self-limitation of all, or almost all kinds of maladies. The only hope and province of the physician here is to allay disagreeable symptoms, interfere as little as possible with the general run of the disease; he acts as the assistant of Nature, and follows her in the minutest manner. So far as drugs are concerned, they are more of a detriment than an advantage except to tide over bad symptoms. This method for this reason has been defined as the expectant.

The treatment of disease having resolved itself into the curative and the palliative, physicians of the intelligent class have at various periods disclaimed the overweening confidence of the great majority of persons in the curative properties of drugs, and have inclined to the former of these methods. One of the most eminent of these medical sceptics was Magendie, a distinguished French physician to whom the world owes a deep debt of gratitude for his additions to medical science. It has been related of him that, in order to prove the universal credibility placed in the curability of drugs, he tried the following interesting experiment. He divided his hospital cases into three classes. To the first class he administered the customary remedies; to the second merely colored water under the pretense that it contained medicine; to the third no medicament whatsoever. As the result of this experiment he found that those who had taken no medicine did the best of all; but the ones who had taken the colored water under the delusion that it was medicine, were the most satisfied in that they thought that they were using some sort of drug; such is the superstition of the generality of mankind. The third class of patients recovered as rapidly as the second; but they grumbled during the whole course of the experiment because they had not been given any kind of medicine. They recovered, so to speak, but grudgingly.

The late Dr. Edward H. Clarke, of Boston, Professor of Materia Medica in Harvard University, while lecturing to his class once remarked, that he had tabulated 105 cases of typhoid fever, giving them the usual remedies; but, that had he not done so, he honestly be-

lieved they would have all recovered *without administering to them a particle of medicine.* And the genial Dr. Holmes was also an advocate of the administration of less drugs. The story is perhaps familiar to all, but will nevertheless bear repetition, how on one occasion he facetiously observed that if all the medicine were cast into the sea it would be good for man but bad for the fishes.

Now such views, coming from men who enjoyed so much distinction in their profession, are worthy the greatest respect. Dr. Holmes also ventured the prophecy that the time would come when all the medicine required by a practitioner would be carried in the vest pocket. And in a medical periodical of very recent issue it was stated that, if the medical profession but well understood their therapeutic virtues, but sixty medicaments would be needed to meet the case of any disease which usually presents itself to the physician. But neither Dr. Clarke nor Dr. Holmes wished to throw any disparagement upon the value of drugs in their proper place, and when in skilful hands. But their arguments as well as those of others were used to discourage the indiscriminate employment of remedies on all occasions, and then just for the sake of having something to take for but trifling symptoms. Such practitioners had no sympathy with this superstitious dependence upon everlasting dosing and dosing, a practice which some medical sectaries seem to encourage.

A good many years ago when but just entered upon my practice, I made a thorough investigation into this subject of the true province of medication and sent the results of my researches to an appreciative editor of a medical periodical. I had consulted all the Pharmacopœias and Dispensatories published in England during the eighteenth century, and compared them with similar works issued in this country down to the year 1870. In the earliest works examined, the given remedies were of course crude and inattractive in more ways than one. It is unnecessary to repeat my researches here. Suffice it to say that the greatest stress in these pharmaceutical works was placed on the certainty of the action of the remedies there described for the given maladies. The confidence there expressed in such drugs is particularly refreshing to our more sceptical age. Add to this the abundance of nauseous remedies derived from the animal kingdom the mention of any of which is not within the scope of the present article. And so it went on from decade to decade with every new issue, of the official organ, containing the officinal preparations in general use, removing or adding one here and there, modifying methods of preparation until those very remedies, whose powers for the cure of disease were so much lauded once by the highest authorities find no place whatever, or are passed by with but a slurring notice. Just as old claims to their virtues were overturned and new ones set up, so doubt began to creep in, and remedies received but a tentative admission. The fact, however, was patent, that the character and preparation of drugs had greatly improved from time to time, if not their curability.

After thus demonstrating to my satisfaction this general improvement in the general tone of medication, as it were, as advocated by medical authorities, I next turned my attention to an inquiry into the number, variety and character of the medicaments then in actual use by the physicians in my own city. For this purpose I analyzed 1,000 consecutive prescriptions taken from the books of a prominent pharmacist, as now denominated, all these dating from the years 1845 and 1846. I made a careful analysis of the several remedies composing these prescriptions. Then I examined 500 other prescriptions taken from another prominent druggist, but dating in this case thirty years later (1875). The remedies prescribed in the latter I arranged in the same manner as I had the other group. Lastly I made a comparison between these two sets of prescriptions, and found a marked improvement in the character of the remedies used in the prescriptions of 1845 and 1875. There had been a gradual elimination of objectionable and inert remedies, a greater simplification in prescribing and much smaller doses of the active ingredients. For from forty to fifty per cent. of all these later prescriptions consisted of vehicles or menstruums to make the drugs more accceptable to the stomach, and not for remedial effect. The actual list of medicines used was exceedingly small.

Now, if we take another leap of thirty years we find a growing tendency to medical scepticism even among the laity. The present medicines are altogether too palatable to be denominated medicines. The very children cry for them as for sugar-plums. But, jesting aside, medicaments have reduced themselves to two classes. The vast majority in demand are those which tend to allay the over-stimulation and excitement induced by the mad rush for gain under the name of "analgesics" or "hypnotics," to relieve insomnia and cure dyspepsia. The treatment of disease is thus reduced to the treatment of symptoms, not of disease proper. The principal or rather popular medication is stimulation and counter-stimulation. The actual benefit from these drugs is but small in spite of the constant introduction of new synthetic products, and the multitude of proprietary remedies, each one claiming a superior therapeutic action over the other, and pushed into the market with wonderful pertinacity. But examination of any prominent pharmacist's prescription book will but demonstrate beyond a doubt the evanescence of this great stream of new remedies.

And this brings us to the last point which it is our purpose now to consider, and one which, in the time of Renouard, was given but little prominence. I allude to the subject of Preventive Medicine which has only received much attention within the last twenty years or so. To find some way by which a disease shall be prevented from declaring itself, seems a more satisfactory and sensible mode to pursue than to grope forever in the dark for a remedy which, in nine cases out of ten, is never forthcoming. There being no relation between the disease and the remedy to be employed for it, the value of every such remedy is only known on trial. But in the case of the prevention of an ailment we have a tangible object in view, so to speak, to grapple with; the disease is before us to study in every phase of it; and, when the laws upon which that affection depends are understood, its prevention is certain,—a far better practice than everlasting dosing.

The rise of preventive medicine is traceable to the rude methods adopted in the Middle Ages to ward off the spread of pestilence by the sequestration of the sick from the well by what is known as Quarantining. This method of preventing the spread of pestilences was acted on with more and more intelligence as time went on. This is the origin of preventive medicine. The modern study of bacteriology is an investigation into

the causes of diseases with the view to their prevention, not of cures—a hopeless task as time has fully demonstrated.

The physician has been frequently reproached with his failure in the direct cure of disease, and his consequent recourse to preventive medicine, to hide the weakness, it is supposed, of his profession and continue for profit a practice in which he has lost confidence. This is especially true of certain sectaries in medicine who claim for their systems a superiority over old, well-established methods of treating ailments. But, at the same time, the very reproaches which they cast on others, they are no less open to. They have the same per cent. of failures, and also accept with all due thankfulness whatever light is thrown out by preventive medicine, irrespective of any professed dogma.

The search after specific remedies, though in some degree still the attraction of the medical profession, yet for all that preventive medicine is constantly gaining ground despite the hunt for special remedies for particular diseases. As the search for such remedies becomes more intelligent less emphasis will be placed upon the idea of the cure, but on the principles of the prevention of disease. The chase after the Elixir of Life will grow less and less persistent; and the preservation of health the chief care of the physician. Vis Medicatrix Naturæ, says the old adage.

F. C. Clark, M.D.

Providence, R. I., Nov. 22, 1905.

NEW TREATMENT OF TETANUS.

To the Editor of The Medical Times:

Having been successful in the treatment of tetanus I wish to make it known as follows; Let the patient be rubbed all over from the crown of his head to the soles of his feet with the strongest sulphur ointment, made with lanoline, to be repeated as absorbed. Internally take every two hours four grams of sulphur sublimatum in honey, beginning with 15 grams if his bowels are constipated. Stimulants in large doses. I would feel obliged if you would have my remedy tried and reported. I remain, Yours faithfully,

Jasper Creagh, M.D.,
University of Michigan.

Pilar F. C. P., Province de Buenos Aire, S. A., Oct. 8, 1905.

The Ship Master's Medical Help (London, Chas. Griffin & Co.) is an excellent book of 350 pages, appropriate not only for ship-masters, but for young ship-surgeons as well. It is an invaluable résumé of all the medicine and surgery that one is likely to require for ship practice. It is practically a first aid manual, and as such should attract also the layman. There are, in addition to a clear account of various diseases and injuries met with on shipboard, chapters on the preservation of health, the general treatment of the sick, the contents of the medical chest and the use and indications of the clinical thermometer. A brief but very practical account of human anatomy and physiology is given. There is an alphabetical description of the various drugs and their uses. There are many useful tables and excellent prescriptions.

RETROSPECTIVE THERAPEUTICS

The Color of the Hair.—The drawbacks in the way of observation and classification of the color of the hair, including artificial as well as normal changes, were pointed out by Dr. Beddoe in the annual Huxley memorial lecture, the subject being "Color and Race." Such difficulty is fairly well indicated in the following: "Which do you think are the more amiable, blonde or brunette women?" asked a fair-haired member of the best of sexes. "You ought to know," was the astute answer; "you have been both." Despite such difficulties as this, Beddoe has been able to offer some distinctly scientific observations. Red used to be the prevailing color of the hair in parts of Central Europe, but it is now a grayish brown. Red was the natural color of man's hair in this region, at any rate in the uncivilized state; the brown pigment came later. The graying process, in our opinion, has surely been a result of the change from the comparatively animal existence of former ages to the intellectual, strenuous, "civilizing" tendencies of modern life. Japanese, Chinese and Egyptian children often had reddish or fair hair; but now there are no fair adults among these peoples. The phenomena observed in the British Isles are accounted for by the intrusions of light-complexioned races from the North and East, the earliest inhabitants having been more usually dark.

With regard to the supposed connection between color and temperament, Beddoe gives a general support to the ancient doctrine, noting the preponderance of dark hair and brown eyes among criminals. He regrets—as who does not?—the suppression of the old blond lympho-sanguine stock by the darker and more mobile type, "largely the offspring of the proletariat and more adapted to the atmosphere of great cities."

Baldness.—We recall a paper on this subject which began in rather a diverting way. It was read in one of those gatherings in which the social element equals and sometimes transcends the scientific, in which the papers of the evening have too often to divide attention with the supper and the subsequent smoke and chat—gatherings which can hardly be called medical meetings, clubs of medical men rather than medical societies, in which one sets forth his views without restraint and in which one is likely to be "pounded" with at least equal freedom. "Hope," began the genial physician, "is generally represented as a maiden clinging convulsively to the Rock of Ages. I think, however, that a much more appropriate representation would be that of a bald-headed patient rubbing vigorously into his scalp the remedy prescribed by a bald-headed specialist in skin diseases." A dissertation on baldness seems from time to time to be expected of every journal of the first order; wherefore we now set forth some sapient observations relevant to this melancholy affliction. If the scalp be not loose upon the cranium, but, on the other hand, bound down and adherent, then there is little hope of capillary restoration; if on the other hand, it can be freely moved about by the fingers much should be hoped for in the way of treatment. Premature alopecia is usually of he latter sort; and one may sometimes be surprised to see a friend after a separation of a term of years with a good "head of hair," where previously there had been none. With advancing years the likelihood of successful treatment of course diminishes. Baldness is sometimes, perhaps generally, of

parasitic origin. In some cases, premature baldness can easily be demonstrated as a hereditary trait. Oftentimes baldness is a symptom of an "under-tone" condition of the organism. Demonstrably this is so after profound shock or fright, or acute and debilitating diseases, as typhoid; such loss of hair being generally but temporary. Oftentimes alopecia is a sequel of chronic shock, or great nervous or psychic strain, or great physical exhaustion enduring through months, or years. Obviously then all the possible causes of alopecia must be inquired into; and successful treatment may depend upon care of the entire constitution of the individual. The patient may accomplish much if he practice constantly the hygiene of the hair and scalp, just as he does any other part of the toilet; such hygiene is most succinctly set forth in Dr. G. T. Jackson's invaluable Handbook of Skin Diseases. The vigorous and conscientious use of two very stiff military brushes and of a comb not too sharp in its teeth, of daily massage of the scalp by means of the finger-tips and *very infrequent* (perhaps fortnightly or even monthly) shampooing, the oiling of the scalp from time to time if the hair be dry and brittle, having the hair cut not oftener than every three weeks by a barber who knows how to use sharp scissors and will cut the hair clean without fraying its ends—these are essentials in the preservation of the hair. With regard to local applications, as a general statement watery preparations are to be eschewed and oily ones preferred. Alopecia may be of syphilitic origin; here specific remedies may prove effective. Otherwise it is usually the result of lack of secretion in the glands of the skin and the drying of the scalp and consequent capillary impoverishment. For such condition as this the oily preparations provide nourishment. And with these may be incorporated a small amount of resorcin or other antiseptic, to combat the possible activity of parasites. Very trustworthy authorities praise the restorative powers of pilocarpin, which drug may be incorporated. (In prescribing remember that its cost averages twenty cents a grain.) Singeing of the hair will neither promote its growth nor retard its decay; it is a measure really detrimental to the good condition of the hair. There are those who for a price will massage one's scalp and anoint it in accordance with the physician's directions; their offices should be very beneficial. If with all these means the hair steadily and progressively thins out, and if the sufferer be very anxious indeed on this point, he had best, if he be an urbanite, give up the strenuous life of cities ('tis not so great a sacrifice after all) and take to farming and rustic repose. Or if he be a philosopher (most bald-headed men are—they come to that eventually), let him be content it is no worse, and be thankful for the pleasures, perhaps conducive to baldness, that have in other years been his.

Diphtheria of Wounds.—Balderi (*Gaz. Med. di Roma*) relates three operative orthopedic cases in which the incised surfaces became infected with diphtheria. The wounds being opened on account of rise of temperature and tumefaction, their surfaces were found to be covered with a grayish-white membrane, cultures from which showed Klebes-Loeffler bacilli. Antidiphtheritic serum caused this membrane to disappear and the children recovered. Balderi concludes that: sterilization of all materials used in dressing wounds is of the utmost importance. Hospital gangrene is produced by the Loeffler bacillus combined with the pyogenes communis. In every case of hospital gangrene Behring's serum should be used at once and repeated until cure results.

The Trustees of Bellevue and Allied Hospitals have issued a report for the first quarter of the last year. Nearly ten thousand patients were admitted, of whom Bellevue alone received more than 7,000. In the psychopathic wards of Bellevue more than six hundred patients were received. The only somnambulist recorded among these was a woman. Singularly, the records of acute alcoholism showed seven women victims as against six men. In March, the organism of the new pathological department was completed, provision being thus made for scientific work of a kind recognized and provided for in the best hospitals in the world. The total amount of the vouchers sent to the Finance Department for the quarter was $110,000. Salaries accounted for $51,000 of this and supplies for an equal sum. The appropriations for the year were $615,000, and the itemized record of expenditures indicates that the trustees kept well within bounds. This should impress the citizen as an exceedingly small amount, considering that the city's annual budget for all its expenses is some one hundred and twelve millions of dollars.

Bellevue and allied hospitals, states the *Sun*, in a graceful encomium, have been taken out of politics. Their work is now performed in a manner more satisfactory to the public than ever before. The latter hears fully and promptly of the mistakes made in them and the errors of judgment that employees make. "Of the thousands of cases in which the doctors, nurses and attendants work with trained skill, scientifically and zealously, nothing is heard, for these are the commonplace routine of the hospitals. It is a comforting fact that many experienced physicians and nurses in New York would rather be patients in Bellevue Hospital than in most of the private institutions of the city.

The treatment of chancre and chancroid is detailed by D. E. Wheeler (*Am. Med.*, Aug. 19, '05), who would apply simple mechanical cleanliness, the frequency of the washing depending upon the intensity of the infection and the amount of the discharge. Mercurial solutions are slightly preferable to others probably because they form with the discharges an insoluble albuminate of mercury. Iodoform is objectionable on account of the disagreeable and compromising odor, and should be reserved for the most severe forms of infection. Deformities of the foreskin forming mechanical obstruction should be relieved at once, but operations for cosmetic effect should not be performed in the presence of infected ulcers. [Intelligent treatment requires a careful differentiation between the chancre and the chancroid; this the books supply. The treatment outlined by Wheeler is very appropriate for the chancre, which should merely be kept clean. The chancroid is apt to spread and may become phagadenic. Wherefore this lesion must be touched daily or every other day with pure carbolic acid. For a lotion nothing better has been invented than the black wash (Lotio Nigra of the Pharmacopœia—a mixture of lime water and calomel), used hot if possible. The prepuce must be drawn far back at every cleaning so that the whole surface including the corona glandis will be brought into view. Applications of hot lotion may reduce a phimosis; if they will not, it is essential to slit the prepuce—*not along the dorsal surface,* but later-

ally, on both sides according to Dr. Robert Taylor's method. This can be done under cocaine.]

Asthma has no distinctive pathology, states Kohn (*Med. Rec.*, Aug. 26, '05), who believes that the essential cause of the disease is probably some organic lesion of the nerve centres of the medulla, though this has not yet been demonstrated. Peripheral or central irritations in certain individuals of a neurotic temperament directed to the underlying cause in the brain, pnœa which is *sui generis*—unlike the dyspnœa of destructive lung tissue, or of cardiac or uræmic types. The former is well defined and unmistakable in the sudden onset of the paroxysm, its seeming gravity, and in the comparatively rapid return to a normal condition. Asthma would thus seem to be a disease rather than a symptom. Kohn has been able to find the record of only three autopsies on asthmatics; in none of these was anything characteristic found. No change in the nerve centres has been discovered to which the disease can be positively attributed. Probably there is a molecular change in the nerve centres a periodic disturbance in their vascular supply; and no doubt the asthmatic attack is the culmination of a series of irritations transmitted to the nerve centres, which finally result in the explosion which, in this, case, is the asthmatic paroxysm. Kohn has had most marked success with potassium iodide. Operative work is not of universal utility, in his opinion; there must be internal treatment produce a characteristic, distressing, periodic dysrespiratory and vaso-motor centres.

Jack (*Buffalo Med. Jour.*, Aug., '05) believes the prognosis in uncomplicated asthma to be positively good. Two or three years of constant supervision by the physician may however be required. Physiologic measures should be substituted for drugs when possible. Blood showing an excess of lymphocytes indicates the withholding of lymphogenous foods, as milk and raw oysters. Blood giving a pronounced iodophilia indicates a withhold of starches; a lack of fibrinous elements in this fluid is an indication for the giving of gelatin. Proteids or meats are to be withheld when there are toxic cadaveric stools. A restricted diet is essential when the urine contains indican. (We would suggest the trial of adrenalin chloride in asthma.)

The Cyto-diagnosis of Pleural and Cerebro-spinal fluids is detailed by Turton (*Practitioner*, April, '05). In *pleural effusions* the formulæ stated by Widal and Savant hold good for most cases. An excess of lymphocytes generally indicates a tubercular origin; a preponderance of polymorpho-nuclear cells an inflammatory process, due, perhaps, to a pneumococcal or streptococcal infection. A passive or mechanical transudation generally contains a large number of endothelial cells. In the earlier stages of tubercular effusions there are often departures from the rule. The cerebrospinal fluid in meningitis of tubercular origin usually shows lymphocytosis; in inflammatory states caused by the meningococcus of Weichselbaum, the pneumococcus or streptococcus are also present. Posterior basic meningitis is characterized by an excess of polymorpho-nuclear cells. Discordant results may be due to a secondary inflection. One may differentiate the various kinds of meningitis; and may also distinguish this disease from the cerebral irritation of typhoid fever and other infectious diseases, from tetanus and hysterical pseudomeningitis, in which there is no increase of cells in the fluid. Lymphocytosis is almost constantly present in general paresis of the insane, in tabes dorsalis and in syphilitic disease generally of the central nervous system. Paresis and tabes may thus be diagnosed even in early stages. Diagnosis should not be based solely on cytological examination; but the latter should form a valuable link in a chain of evidence. One should make more than one count whenever possible.

The Prevention of Apoplexy is the title of an important paper by Allbutt (*Bristol Medico-Chirurgical Jour.*, March, 1905). In many cases of sanguineous apoplexy, the kidneys are not granular. Some of these cases may present fibrous changes in the kidneys, which are not, however, such as characterize Bright's disease. Allbutt is inclined to rule out the "Brightian class" of kidney lesion, with relation to apoplexy. Why, he asks, have the arteries burst in apoplexy when the kidneys are healthy? The arteries may be the seat of atheromatous or sclerotic change; but, although diseased, they have not silted up, as in cases of Bright's disease, but have burst. Arteries give way, not only to the mean pressure of age but further to the mean pressure of a reluctant peripheral circulation; they give way in consequence of the accumulation of "obscure stresses," which might be averted, if we knew how. The obstruction must be due either to a narrowing of the calibre of the arteries or stream bed over a very extensive area, or to an increased friction of the blood itself. If, states Allbutt, we are in the dark as regards the mechanism of persistent rise of the arterial tension, there is fortunately less doubt as to the treatment of the condition. A patient can be saved from apoplexy only by long anticipation. A tendency to hypertension runs in families; hence vigilance must be exerted with regard to members of such families. However, this condition is much more underspread than this. It may be met with even in children and young people. In them the arteries may be thickened, but rather in the muscular coats than in the intima; and this hypertrophy may disappear just as does a cardiac hypertrophy when exceptional strain has been removed. Arterio-sclerosis as distinguished from the sclerotic decay of senile involution is not the cause, but the result, of rising arterial pressure. Hence prevention lies in detecting a special tendency to a persistent mean rise of pressure. Occasional rises occur in all people, but they disappear before they do damage. The rise may be persistent and very marked, but if recognized early, this tendency may be reduced and kept down. Wherefore, every adult of forty and upward should have his blood-pressures measured, say every five years, up to sixty, when, if there is no great increase of pressure, apoplexy need not be feared. In some cases of rising tension without Bright's disease, arterial spasm is manifest, but in perhaps the majority of such cases it is not. In some the "large, lax and leathery" artery is present, in others the "wiry" vessel. The first kind may be regarded as arterial tension, the effects of tension being very manifest in the consequent tortuosity of the vessels. In the walls of the wiry vessels this stretching effect is less marked, but this condition is far more difficult to reduce. There is, however, no difference in treatment between the leathery and the wiry groups; yet the latter is far less submissive to deobstruent treatment than the former. Neither does Allbutt treat burly, red-faced patients differently from the spare and pallid. He finds pallor and wiry vessels to be more frequent among the sedentary. Over-

eating must be avoided, where there is persistent rise of mean pressures the mode of life must be revised. Regulated exercise, abstinence from alcohol and a great reduction in food are all necessary. Certain spas—Herromgate, Carlsbad and Marienbad, may be visited if possible. Different people respond variously to treatment. In some reduction is difficult; in others a couple of seasons at a bath, with restricted diet and regulated exercise, will obviate danger, at least, for a time; in others, despite all treatment, the rise of pressure, although set back, returns again and again. In these latter cases apoplexy is pretty certain to occur in the end. The systematic bloodletting of former times was a rough-and-ready mode of treatment of morbid rise in blood pressure. Vasodilator treatment is unsatisfactory; it is the *cause* of the abnormal rise of pressure that requires to be treated. But vasodilators may be of use at certain moments. On the occurrence of a slight apoplexy, all these measures must be carried out with greater vigor. The importance of determining the blood pressure in middle-aged persons is emphasized. Instruments should be used; even the most cultivated touch cannot be trusted. One may thus detect the first stages of that process which finally ends in apoplexy.

Pure Phenol in furuncle and tuberculous skin lesions is advised by Vörner (*La Sem. Medic.*, Oct. 25, 1905), who simply touches the centre of a small boil with phenol made liquid with alcohol or perhaps a little water. In large boils or carbuncles the skin is punctured repeatedly with a needle charged with phenic acid, which is carried as deeply as possible into the pores, unless the skin is broken, when the medicament is applied directly. Often one application is sufficient to cure, in other cases daily treatments are given for a week, depending upon the extent of the lesion. (We should ourselves not wait so long without recourse to other measures.) The alcoholic solution of phenol was also found very effective in hastening the cure of skin scrofula, especially when associated with deep lesions of the lymphatic gland or periosteum.

A work on the Pathology of Clothes is promised by a contributor to *St. George's Hospital Gazette.* The prospectus alleges that the treatment of diseases and accidents of the toilet will be considered. Among the lesions described, states the *Medical News,* are "perforating ulcer of the sock; false passages of the vest; hairy mole of the shirt-cuff; idiopathic atrophy of the pajamas; sloughing of the posterior foramen of the collar band, and prolapsus trouseri." A chapter is to be devoted to "Addison's disease of the shirt-front, madura pump, and inoperable volvulus of the necktie." The following is the causation of false passage of the vest: "The head, being hurriedly thrust into the garment, lacerates the fabric and emerges through the posterior wall of the axilla instead of through the cervical canal."

Cervical Rupture by means of a Dilator.—The dilating forceps are a peculiarly American institution. Continental operators, as a rule, eschew them, because of the danger attending their use. Careful and deliberate manipulation of them is usually unattended with danger. But forcible dilatation by a physician in a hurry may rupture a rigid cervix. Sometimes the tear will not be extensive, and can be remedied. However, it is not pleasant to have this mishap upon one's conscience, especially as, years after the event, another practitioner may during an examination express to the perhaps nulliparous patient his wonder how the cervical tear came about. Again, much more serious results may obtain, as in the case related by Boldt (*Am. Jour. Obst.*, April, 1905) of a woman twenty-seven years old, who had been married eight years and had borne three children. Having become pregnant a fourth time she miscarried, at a period not stated. Hemorrhage having continued for forty-eight hours after the expulsion of the ovum, the physician purposing to curette, began with the use of a dilator, upon which the structures at once gave way; a very profuse hemorrhage occurred, followed by collapse. On passing the fingers into the rent, he entered the peritoneal cavity and felt intestines. The tear was plugged with a strip of iodoform gauze, and nothing further was done until Boldt saw the case five hours later. She had then partially recovered from the collapse and complained of intense abdominal pain, vomiting and much thirst. The distended abdomen with rapid pulse of poor quality indicated a beginning peritonitis. Upon laparotomy a large quantity of fluid and clotted blood was found in the abdominal cavity. On the right side of the pelvis a laceration was discovered which involved the whole length of the cervix, and extended a short distance above the level of the internal os. The broad ligament was perforated by an extensive tear through its posterior reflection. The peritoneum had been stripped off the anterior aspect of the uterus, and a large hæmatoma had formed in this situation. As the hemorrhage had apparently ceased it was decided to adopt a conservative plan of treatment. "Most of the blood having been cleared out, the pelvis on the side of the tear was packed with sterile gauze, in such a way as to compress the vessels and at the same time cut off the uterine cavity so as to prevent infection by contamination." The abdomen was then closed, and the end of the strip of gauze brought out at the lower angle of the wound. Death ensued two days later.

Local Anaesthesia in the Radical Cure of Inguinal Hernia is advocated by Bodine (*Med. Rec.*, Oct. 21, 1905), who has operated by this means on 284 patients with 300 hernias, without a death or a suppurating wound. By means of Schleich's infiltration the amount of cocaine used is reduced to a minimum and limited to a small area, producing acute local anemia, effectually retaining the fluid in one spot. Pain is abolished in a sensory nerve trunk by cocainization, thus making possible an operation in the region supplied by it. The area here is superficial and the region restricted by the anatomy of the parts. In strangulated hernia local anæsthesia does not increase the shock, which may be the case with general anæsthesia. By the former method hot towels may be applied for some time to a possibly gangrenous intestine, in order to determine whether it will react. The operation does not give rise to the danger of injury to the nerve fibres or of injury to deep sutures from vomiting. There is no danger of cocaine poisoning, but one-half grain of the drug being used intermittently throughout an hour. Morphine, after operation, may be given in possible cases of cocaine poisoning. There is no occasion for haste; the patient evinces no pain during the operation. The solution of cocaine used (freshly made) is one-fifth of one per cent. for infiltration of skin and nerve trunks, and half this strength for subdermal infiltration. The line of skin incision should be infil-

trated throughout its extent tightly enough to maintain the local anæsthesia for an hour. The aponeurosis of the external oblique requires no infiltration; it should be incised over the situation of the underlying ring. The ilio-inguinal narve will be exposed by retracting the flaps, and its trunk is then cocainized by a few drops of the solution. The incision may be carried painlessly into the external ring, and the flaps reflected to expose Poupart's ligament and the conjoined tendon. The ilio-hypogastric, if found, may now be cocainized. The margins of the internal ring are infiltrated. A line along the long axis of hernial protrusion permits a clear cut throughout the hernial sac and coverings. The neck of the sac is infiltrated, dissected away from the underlying cord, ligated, and amputated. The genitocrural nerve is cocainized, the sac is dissected away from the cord and the operation is completed. Operations on the female are easier than those on the male.

American Ginseng, declares *American Medicine,* has a certain demand, but brings much less than that from foreign countries, especially Manchuria. There it is obtained wild, the roots possessing a grotesqueness of contour not seen in the cultivated American plant; this is largely the occasion for the discrimination between the two, the Chinese ascribing certain superior qualities to the shape of the root. The Manchurian Ginseng also comes from the Emperor's mother country, "out of the same soil from which he, the Son of Heaven, sprang, and hence is regarded as a more potent life-giving remedy." In some cities the American brand is preferred, as being milder and cheaper. Five grades are recognized, and the merchant must supply each community with its choice, which is often not dependent upon the real quality of the roots.

Laryngeal phthisis is treated by Hamm. (*Therap. Monet.,* July, 1905), in its general aspects, according to the principles now well known. The local treatment varies with the stage of the lesion. In progressive and severe cases of phthisis, all applications as well as astringent inhalations should be stopped. Only narcotics should be used, and orthoform should replace morphine in insufflations or other topical applications. Inhalations are simplest and best; ℞, Balsam Peruvian. ʒi; Sp. Vini Rect. ʒss. M. S. Fifteen drops shaken up in a jar with boiling water or camomile tea and inhaled through a long paper tube, tied. Caustics are necessary if infiltration or ulcers are present. Lactic acid, tri-chloracetic acid and the galvano-cautery are equally good; the first of these must be used in not too weak concentration, and must be rubbed in with some force. Curetting under cocaine is appropriate, but every nook and cranny cannot be reached in this way. Hamm would send his patients in winter to the North Sea Islands. Here the temperature is more even than in Italy or at Davos, there is no sudden fall at sundown and there is no dust.

Perineal abscess is discussed by Alexander (*Med. Rec.,* Oct. 28, 1905), who believes that practically all perineal and periurethral suppuration are accompanied by infection of the tissues above the triangular ligament. Upon this assumption simple incision and drainage of the pus foci below the triangular ligament is not sufficiently radical. Alexander opens a perineal abscess by a free median incision from the scrotum to three-fourths of an inch in front of the anus. The deep layer of the superficial fascia is divided for the entire extent of the incision. The abscess cavity, after the evacuation of the pus, is cleansed of all necrotic tissue and any sinuses or pockets are opened. The membranous urethra is opened upon a staff with a wide median groove; this incision should divide the floor of the canal and the lower border of the triangular ligament and should extend from the bulb of the urethra to the apex of the prostate. A careful exploration for any foci of suppuration is then made by the forefinger passed into the urethra through the perineal incision as the staff is withdrawn; it may be well even to make simultaneous counter pressure with the finger of the other hand upon the anterior wall of the rectum.

Skin diseases in young children should be treated according to three fundamental rules, states Fox (*Practitioner,* Oct., 1905). First, scales, serous discharge, pus formation and crusts must be completely removed by non-irritating methods, such as gentle bathing with tepid oatmeal gruel, the crusts being softened by olive oil, boric acid fomentations or cold starch poultices. Second, scratching and rubbing must be prevented by soothing applications or by the manual application of cardboard splints. Third, inflamed surfaces must be treated by medicated dressings and an occlusive one in the form of a compress of muslin or lint spread with salves or in the form of pastes or varnishes.

Sciatica is very ably discussed by Leszynsky (*Med. Rec.,* Sept. 9, 1905). Sciatic neuralgia is rare; the term has been indiscriminately applied to all painful affections in the course of this nerve. Pain occurs in all diseases associated with compression of the sciatic nerve or the sacral plexus. The vertebral column may be involved, or there may be tumors, and inflammation in the pelvis, malignant disease of the rectum, aneurisms and hemorrhoids. Such pain may indicate a general toxæmia, or may be a referred pain in urethritis and epididymitis. Cases which develop rapidly are likely to be due to cold; those which develop slowly, on the other hand, are either due to some form of external pressure or are symptomatic of intrapelvic disease. A careful examination must thus be a prelude to intelligent treatment. Rest in bed with or without fixation of the extremity by a long splint is most important. The ice bag will be helpful in some cases. The rectum should be cleansed by enema followed by hot saline irrigation at 110° F.; undoubtedly marked relief of the pain will follow such irrigation, which may be repeated several times a day. Massage is better borne after the more acute symptoms have subsided. Superficial linear Paquelin cauterization over the sacral region and along the course of the nerve trunk is often effective. Continuous galvanism (large electrodes, one placed over the lumbar region, the other in the popliteal space) are appropriate at the end of the first week. The current should be as strong as the patient can tolerate with comfort. Modified rest cure may be indicated in subacute and chronic cases. Much may be accomplished by daily massage with passive movements and regulated systematic exercises. Occasional passive extension of the limbs should be made, thus moderately stretching the nerve and loosening adhesions.

The California State Nurses' Association, notes an exchange, have asked the State University to recognize the nurses' profession on the same footing as medicine and law, by examining and registering nurses in training schools in the manner that all secondary schools are examined.

MISCELLANY

Avoid amputation, if possible, in dealing with infections or injuries of the fingers, especially with the thumb, the most important of the digits.—*Am. Jour. Surg.*

Labor will be a dream, declares an exchange, if you give the primipara half an ounce of castor oil every other night for two weeks before the expected date of birth.

Intravenous saline infusions are harmful in volume beyond one to one and one-half pints for an adult of average weight; congestion of the internal viscera may be a sequel, states *The Medical Standard.*

A London doctor, summoned for debt, said that he could not pay because so many of his professional brethren in his district were charging sixpenny (12 cents) fees that he was unable to make a living.

False appendicitis is dwelt upon by De Nittis (*Presse Med.*), who gives the histories of several cases in which, although the symptoms strongly indicated the presence of appendicitis, no inflammation of the appendix was found on operation.

Princess Henry of Battenberg has opened a bazaar in aid of the funds of Darlington Hospital, in London. If her genial and too amiable husband falls a second time into the clutches of an American dentist, he will be likely himself to be in need of such funds.

The Eucalyptus tree has been considered by the Panama Canal Commission for the purpose of eliminating the breeding places of the mosquitoes, this method having been used with much success by the French in Algiers, the marshy lands having thus been dried up.

Patent Medicine Peddlers, who go about the country vending preparations containing alcohol must hereafter pay a special tax at every separate place where they make any sales. This is the order issued by Commissioner Yerkes to all collectors of internal revenue.

A True Saying.—Maxim Gorky, in the November *Cosmopolitan* declares: "The world will surely agree with me when I say that inordinate development of the intellect weakens the capacity for feeling, and that the very instinct of life itself may be undermined by such development."

A reversion to type is indicated in the lay newspaper medicine of to-day, according to which two investigators at the University of Chicago declare that, "What we have learned gives us hope that some day we may replace the wounded or worn-out heart of a human being with the healthy, youthful and strong one from a living monkey."

Precancerous conditions in the breast are enumerated by Robson as eczema of the nipple; chronic inflammatory enlargement; cysts and adenomas, and indurations following injuries. If the eczema does not speedily yield the nipple should be excised with the first portion of the primary ducts. In the other cases the involved lobules or the whole breast should be removed.

To prevent stage fright and to combat nervous asthenia our Denver namesake advises ten drops of the tincture of gelsemium three times a day. This is a suggestion which should be especially valuable to young colleagues reading their initial essays before medical bodies. Even heroes of a hundred papers and much adverse discussion would de well to have recourse to it.

Prof. Behring's Remedy is, as he emphatically states, still *sub judice.* It were best, therefore, to withhold comment concerning this serum, which may become a potent factor against the disease tuberculosis, until the eminent scientist himself gives to the world a succinct and authoritative account of it.

Graveyard Insurance is the form written for large amounts on persons about to die. The "Armstrong Committee," now in session in New York City, is declared to possess evidence to the extent that extensive fraud has been worked in these policies—being in effect a form of insurance bribery. It would seem that this fraudulent practice has been in vogue for many years.

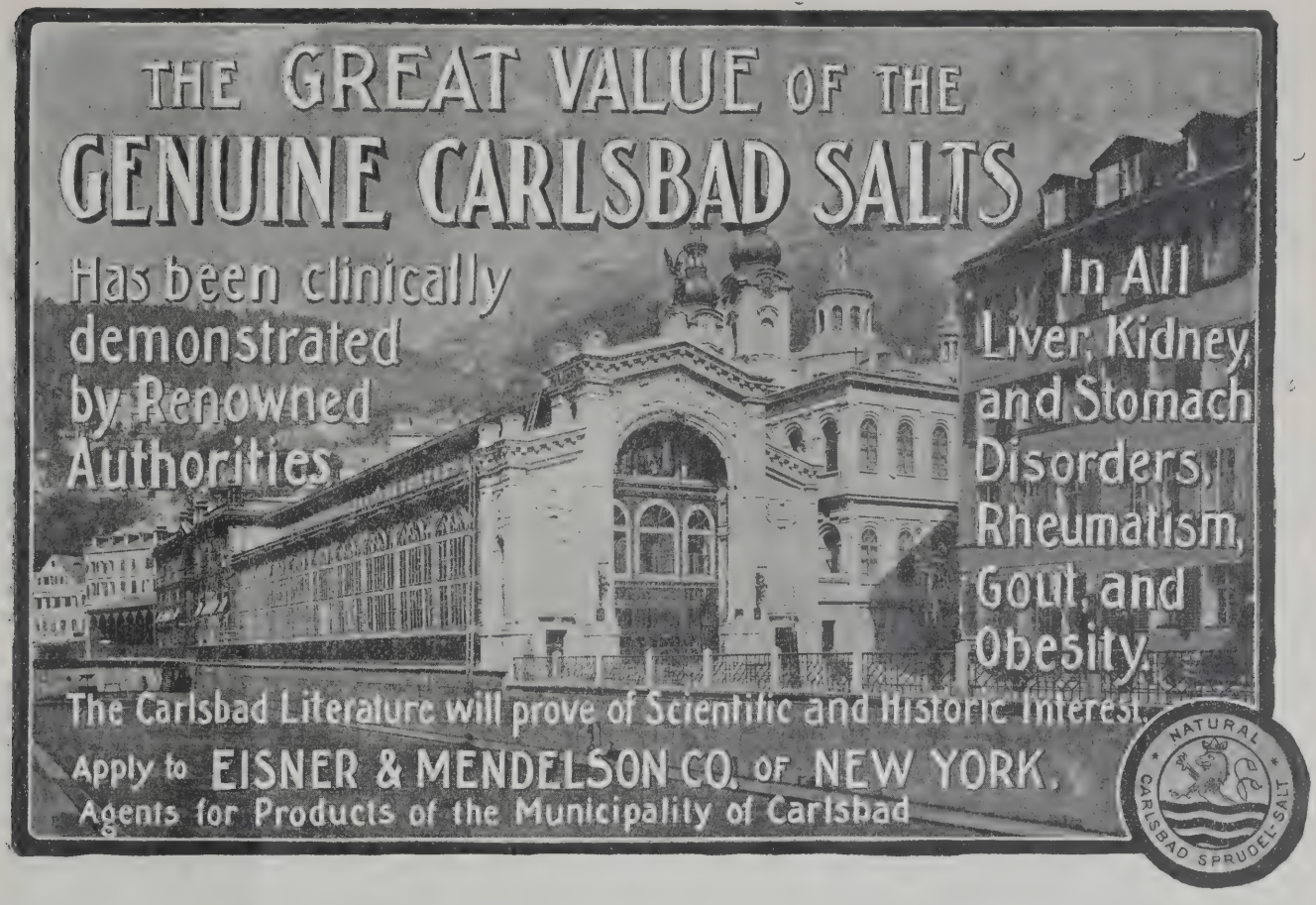
Sea Water Injections for Phthisis have been made by Simon and Quinton in Paris. Eighteen cases of tuberculosis were thus treated, the sea-water having been made isotonic and sterilized. From 50 to 300 c.c. were injected every three or four days. The results (reported at the Académie) showed in fifteen cases a mean gain in weight of nearly one ounce a day. The treatment lasted on an average for sixty days.

Sir John Scott Burdon-Sanderson, regius professor of medicine at Oxford University from 1895 to 1904, died recently in London. He was one of the greatest medical authorities of his day, and held, during his long life, many important positions. He was at the head of many royal commissions for the investigation of disease, including cattle-plague, cerebro-spinal meningitis, tuberculosis, etc.; and his many reports on infectious diseases and sanitation are of great value.

The Tuberculous Cattle on the Dominion experimental farms at Nappen, Nova Scotia, are not to be slaughtered. The veterinary inspector general, Dr. Rutherford, has recommended that experiments be made in the hope of eradicating the disease by the fresh-air cure. The sound and diseased animals in the herd will be separated and housed under the most approved principles of sanitation. It is hoped to effect a cure by introducing some treatment that has proved beneficial to human beings.

The British Science Guild, made up of the scientific bodies in England, has for its purpose to popularize science; to make evident to the average Englishmen the importance and the profit of adopting scientific methods; and to warn him that in this way only can he hope to maintain a leading place in the world. It is also purposed to extend the efforts of this body to the British Government as well, inducing it to adopt scientific methods in all its departments. The *Harvey Society,* of New York City, has in view the like aim of spreading scientific knowledge among the people, at least with regard to medicine.

A Memorial Window to Dr. Edward L. Trudeau, Jr., who died in New York City in 1904, under very touching circumstances, was recently placed in the church of St. John in the Wilderness at Paul Smith's. The funds to this end were subscribed mainly by young Dr. Trudeau's friends among the campers and summer visitors in the Adirondacks. Mr. J. L. Aspinwall, the architect of the church, undertook to carry out the wishes of those interested in the memorial, which shows a pilgrim in an attitude of reverence and admiration, holding in his right hand a staff which bears the serpent entwined about it, the symbol of Dr. Trudeau's profession.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Information Wanted as to the practical lives of the Blind. Dr. George M. Gould, 1722 Walnut street, Philadelphia, will be grateful for any trustworth information as to the methods which have been devised by the blind in overcoming their disability or in gaining a livelihood. Accounts of such lives, anecdotes, references to literature, etc., will be appreciated.

George Washington's Physician, Their Friendship, and His Treatment During the President's Last Illness, is the title of a most interesting little booklet published by J. S. Tyree, the chemist, of Washington, D. C. It is of much interest to physicians, as it contains much unpublished history relating to this noble old physician and his devotion to President Washington. The engraving of the doctor and Mount Vernon are both excellent. Every member of the medical, dental, and pharmaceutical professions should possess a copy of this little booklet, which we understand Dr. Tyree is mailing free of cost, for a limited time, with the assurance that no requests for copies will be made public.

Christian Science an Ancient Delusion. That the present Christian Science and Dowieism cults are but the recrudescence of beliefs centuries old is strikingly shown by Dr. Hugo Magnus in his new work entitled "Superstition in Medicine." After speaking of the early delusions regarding the cure of all ills by faith Dr. Salinger says: "Recently we have learned from two exceedingly instructive examples, to what extremes the sentiment of fanatical religion may lead men so soon as they shake off the steadying influence of physicho-mechanical ideas in their theory of life. Then theocracy strives for an exclusive ascendancy in the domain of medicine, as is distinctly shown by the position taken by Mrs. Eddy, with her 'Christian Science,' and Rev. John Alexander Dowie, with his 'Christian Catholic Church of Zion.'

The Dethroning of Alcohol. Another potent factor in the dethroning of alcohol has been the spirit of scientific research of recent years. In the great laboratories scientists have been carefully studying the effects of alcoholic liquors upon the various organs of the body, and, although they differ in their conclusions upon some points, the result is that those physicians who have most closely followed these investigations have, almost or entirely, abjured alcoholics as a necessary part of their therapeutic outfit. These elaborate studies of alcohol have convinced many that the nourishing and strengthening properties formerly ascribed to alcoholics existed only in the imagination, and belong to the errors of an age which had no facilities for accurate observation. The food qualities of the grains and fruits, it is now believed by many authorities, are destroyed in the process of making alcoholic drinks. Even the stimulating qualities ascribed to alcohol are denied by many, who class it among the narcotics because of its depressant effect.

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Lea Brothers & Co. announce the Practitioners' Visiting List for 1906, Being in its twentieth year of issue, it embodies the results of long experience and study devoted to its development and perfection. For particulars, address the publishers.

The West Side Clinical Society has recently been organized with Dr. Charles Ross Jackson, as president, and Dr. Charles A. Haffner, secretary. The meetings will be held at residences of members on the evening of the first Friday in the month.

Dr. S. Weir Mitchell, whose work seems to grow better and richer with every passing year, is writing a new short novel, the first chapters of which will appear in the February Century. The scenes of this latest work of the author of "Hugh Wynne," "Constance Trescot," etc., are laid in Paris at the time of our Civil War.

Medical students and physicians who want to brush up in chemistry, pharmacy, etc., should take the PRACTICAL DRUGGIST INSTITUTE Correspondence Course. It is the best and most successful thing of its kind and will enable any physician or medical student to pass the Pharmacy Board and become a qualified druggist. Sample lectures and full particulars free on application to PRACTICAL DRUGGIST INSTITUTE, 108-109 Fulton St., New York.

Messrs. Lea Brothers & Co. announce for publication early in January, 1906, a completely new work on Dietetics adapted to the use of Practitioners and Students of Medicine, Nurses and the Laity, by Robert F. Williams, M.A., M.D. The volume will be a convenient 12mo of about 350 pages. Its price has not yet been fixed, but it will probably be about $2.00 net, delivered to any address, The importance of a work of this kind, which is simple enough for a child to read and yet absolutely trustworthy and based upon the scientific achievements of accepted leading authorities, is obvious. Such books are in line with the best principles of Hygiene and make for the betterment of the present as well as future generations.

A Clergyman's Tonic. The Journal of the American Medical Association vouches for the following story: A much respected clergyman fell ill, and the family physician was called, who, when his examination was completed, sought privately the patient's son. "Do you know what is the matter with your father? He is suffering from chronic alcoholism." "What! Why, father never drank a drop of liquor in his life, and we know all there is to know about his habits." "Nevertheless it is chronic alcoholism; and at this moment your father is drunk. How has his health been recently? Has he been taking any medicine?" "Why," answered the son, "for some time, six months I should say, father has often complained of feeling unusually tired. A few months ago a friend of his recommended Peruna to him, assuring him it would build him up. Since then he has taken many bottles of it, and I am quite sure that he has taken nothing else."

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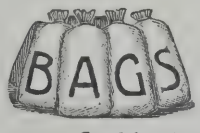

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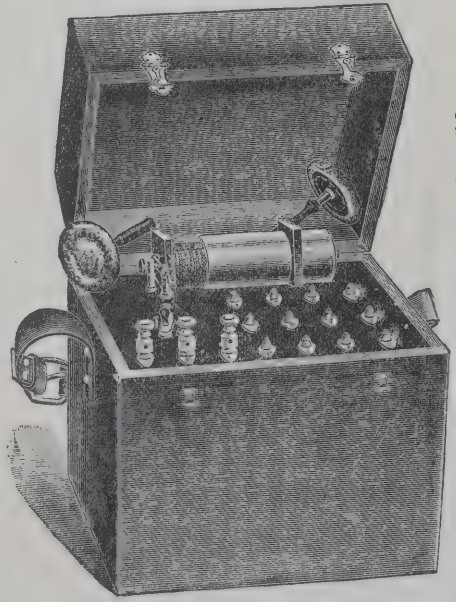

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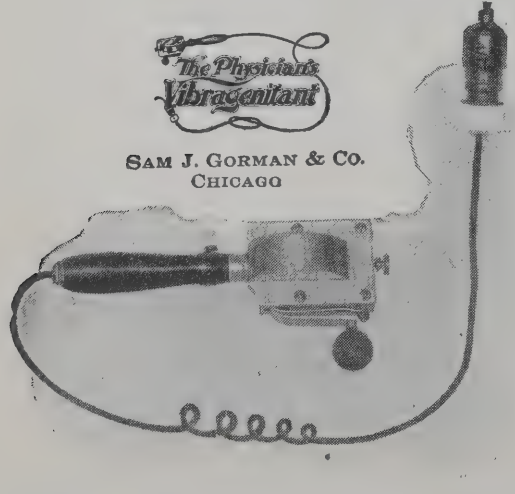

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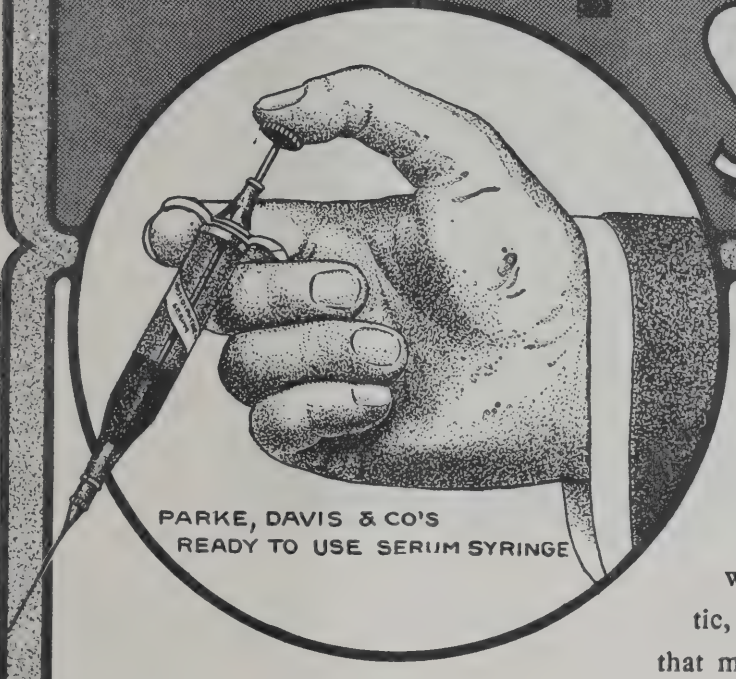

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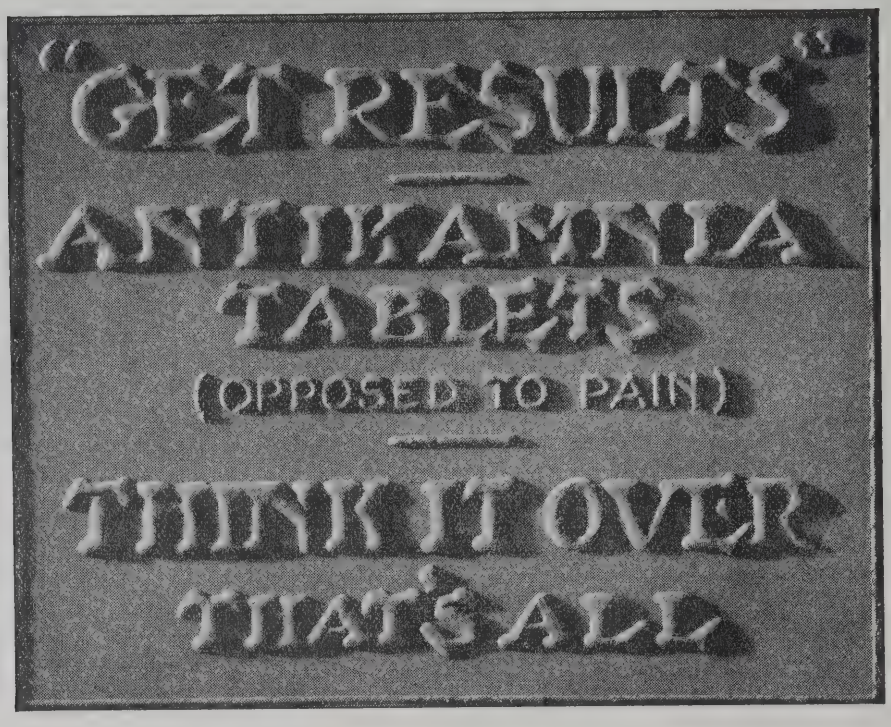

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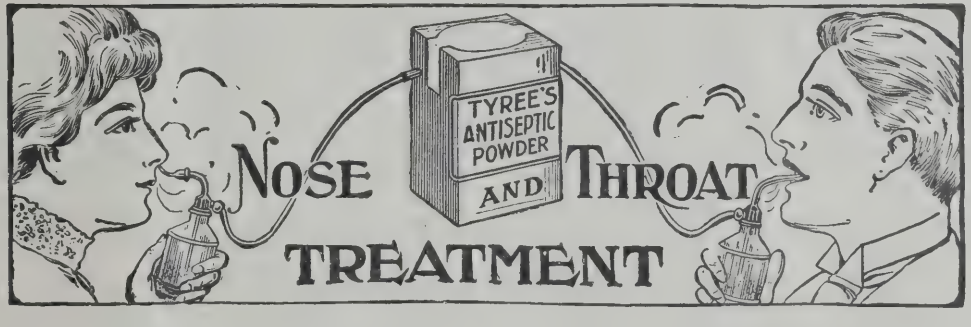

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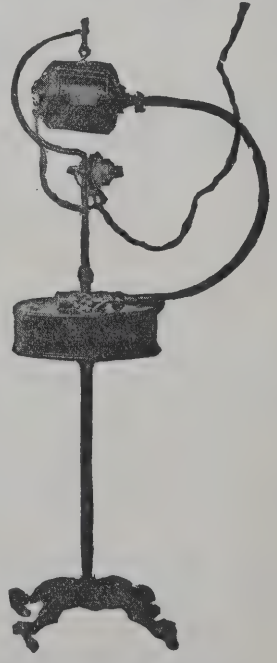

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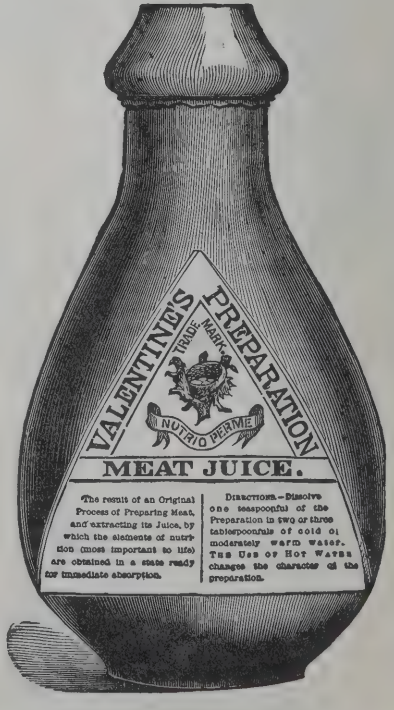
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SUGGESTIVE THERAPEUTICS.

Part I.

BY W. T. MARRS, M.D., JEWETT, ILL.

THE object of this series of papers is to bring the valuable points contained in psycho-therapy as intelligently before the profession so far as is possible in the amount of space allotted. It is my aim in this presentation of the subject to divest it of all that is to the novice at first so alluring and later disappointing. The writer having examined, with some measure of thoroughness, extending over a number of years, the various schools of hypnotism and suggestion, he will undertake to sift the wheat from the chaff, and offer only practical suggestions, such as may meet the approval of the most conservative medical man. It is my desire so far as possible to eliminate the name "hypnotism" and cognate terms, and will endeavor to show what has been done and what can be done by suggestion in the waking state as an adjunct to regular medical treatment. We may note in passing, however, that there are morbid conditions and functional ailments that can be quickly relieved by suggestion given the patient under deep hypnosis. As an aid in minor surgery and other selected cases, complete hypnosis is often of great benefit. But hypnotism, like many other agencies, is a two-edged sword, and in the hands of an unskilled operator may work injury to the patient. If the patient is weak, nervous and self-conscious, he may be strengthened physically, mentally and morally by suggestion properly given, while in a state of hypnosis or passivity. If, however, he only be made a martyr to scientific research and put to all kinds of severe and ridiculous tests at frequent intervals his weak points may become more accentuated and he may become somewhat of an automaton.

Another reason for discouraging hypnotism indiscriminately used is owing to the superstition and misconception surrounding it, making the mention of the word hardly permissible in the presence of a patient. Furthermore, the fakirs, fortune-tellers and show people in general seem to have a corner on the mysticism attaching itself to the word, so that educated physicians do not care to vie with that class of individuals. In speaking of this phase of the subject I wish to state that I have developed a number of subjects into the clairvoyant and somnambulistic states with no untoward effects resulting to them. So much depends upon the conscience of the operator.

The term "suggestion," as we shall use it, is of rather broad significance and may be defined as being somewhat synonoymous with "imagination." It is anything that causes in a person some involuntary effect, the impulse to which passes through the intellect, producing some imagination or ideation. In other words, it is any idea which controls or favorably impresses an individual. If we simply think of it as anything which produces imagination in a person we have a working basis for our study. That the imagination is a great causative as well as curative factor in disease no one will deny. All suggestion is mediated through an ideation or action of ideas or illusion. The great susceptibility of the organism to influence from such ideation explains the part played by the imagination in causing and curing certain diseases. Suggestion may operate in many ways to reach the brain. The most direct and forceful is verbal, when it reaches the center of ideation through the ear. If written it passes through the eye. Smell, touch and taste are also easy routes for suggestion. The saliva flows when we smell delicacies or hear them spoken of. Touch produces impression, hence the thrill that lovers know so well, and the feeling we experience when one of influence or station grasps us by the hand. Associated with touch is the law that impressions made upon the periphery always relieve tension of the cerebral centers. For this reason massage and other rubbings or anything acting upon the cutaneous surface are not without their effect upon the deeper centers.

We say to a young girl: "How you are blushing!" Her face may be placid, but a suggestion like this will affect her vasomotor system and soon her face is suffused with redness. By yawning or pretending to yawn you can set a whole company to yawning. In fact, we are all amenable to suggestion. We can not discuss at length the different phases, physical, psychical, etc. One's susceptibility depends so much upon age, sex, health, education, temperament and environment. Strong, sturdy, hard-thinking men are not susceptible in a degree to compare with weak, sensitive persons, especially women, children and old men. But one person may be influenced by a suggestion that would have no influence upon another. It all depends upon what appeals to one's faith and belief. Faith in one's physician and his reputed skill is often the determining factor in the alleviation of one's ills. The personal equation of the doctor is important. Many physicians are more successful than others, not so much by reason of superior knowledge, but mainly because they grasp the patient's mentality and appease his psychic needs. Many wonderful cures (?) in the past, as well as in the present time, have been performed through the agency of the mind. Many of these have been accomplished through the sufferer's subjective faith without the alleged healer's intervention or knowledge. A patient of the writer's cured himself of the tobacco habit, thinking some medicine I had given him was for that purpose. He had stated that nothing tasted natural only tobacco. As I handed him a box of calomel tablets I flippantly remarked: "Perhaps these will take away your taste for the weed." He quit tobacco for good and heralded the fact of his great "cure" to his friends. Great is imagination! The religious zealot gets the same effects from being rubbed by the bone of a donkey as when rubbed by the bone of a patron saint, if she be not disillusioned. If the disease be functional, good results may follow, depending upon how strenuous the faith; if the disease be organic, the mind may be appeased.

It is a law of psychic phenomena that the things we earnestly hope and desire or firmly expect are the things most likely to be experienced. Very few youths are troubled with seminal emissions until they have read the harrowing details set forth in the "lost manhood" literature that floods the country. The large sale of patent medicine is mainly due to the crafty advertiser whose skilful words are calculated to catch the weak and suffering. Medical students often become neurotic from studying disease. A professor of chest diseases in a medical college told me that when he began lecturing on diseases of the heart each winter the boys would flock to him at night to have his assurance that they were not suffering from serious cardiac lesions. We know that where a number of persons are closely associated how contagious certain neuroses are, *e.g.*, chorea, hysteria, etc. There is hardly an abnormal con-

dition—even hydrophobia—but can be successfully simulated. The physician should try to grasp the cause of disease (not ease), whether that cause be physical or psychical, from without or from within.

Ancient medicine was a sort of crude psycho-therapy domineered by the priests and soothsayers. History is replete with accounts of their work where, of course, imagination performed the cures. Sometimes instead of cures curses and diseases were multiplied. In all ages many different names have been applied to the *modus operandi* of healing. It seems that something palpable has always appealed more strongly to the imagination and rivets the attention; hence we note the history of holy wells, amulets, relics, magnetized objects, laying on of hands, and many other things galore. More recently we have faith and magnetic healing, Christian science, Dowieism, placebos, etc. In all these where ills are relieved suggestion appeals to the mind in some way that causes it to assert its supremacy and control over that part of the organism which is affected.

While the latent forces of the mind have always operated for the good or ill of the afflicted, it has not been until the last few decades that any systematic or intelligible application has been made of it. In the succeeding papers I shall attempt to show how suggestion may be used with good results during the waking state, during hypnosis and during natural sleep, with reference to special diseased conditions.

THE X-RAY AS A THERAPEUTIC MEASURE.

BY GEO. R. WILSON, M.D.

PART II.

Most exhaustive of the uses of the X-ray was the report by Pusey published recently in the *Journal of the American Medical Association.* In hypertrichosis the use of the X-rays for the permanent removal of hair has not equalled his expectations; they have given satisfactory results only in about 50 per cent. of cases, but to get these results has required long and painstaking treatment. In sycosis and tinea sycosis Pusey's results with X-rays are exceedingly satisfactory, and in some intractable cases they give results that are obtained in no other way—and are permanent; some of Pusey's cases having been well more than three years.

It is in acne that the X-rays are little short of marvelous; improvement being produced in the most obstinate acnes from careful X-ray exposures. Pusey never failed to see an improvement take place after a reasonably long period of treatment, and in many cases where no other method had been of benefit. The application of X-rays for acne has to be carried out with great care, and it should not be undertaken until the operator knows with reasonable assurance the X-ray effect he is going to produce. The treatment extends over a considerable period of time, perhaps several months, and unfavorable after-effects on the skin, Pusey has not seen.

The use of X-rays in chronic inflammatory dermatoses has proved of great value, thus in chronic indurated eczema Pusey's experience, like that of numerous others, testifies to their usefulness, particularly in the chronic intractable eczemas of the hands, in chronic indurated eczemas of other parts, and in acute exacerbations of old eczemas. Their effect in relieving itching is frequently quite marked, but sometimes fails, but their effect is not limited to the relief of itching; there is also a positive influence on the metabolism of the affected tissues causing complete disapppearance of the diseased condition.

In pruritus ani and vulvæ Pusey found the benefit from the use of X-rays that other observers have reported; but although the temporary relief of itching has been very common he is not sure that any case has been permanently cured, but the relief that can be given, however, fully warrants the use of the treatment. In pigmented and flat vascular nevi Pusey's experience with a few cases has led him to believe that X-rays offer a method of treatment of distinct value.

Pusey has seen but one case of lupus vulgaris which failed to yield satisfactorily to the X-rays, and that was a case of lupus of the face extending deep into the tissues, which had recurred after a plastic operation; in his experience, lupus yields readily to X-rays, and when the treatment could be carried out satisfactorily the results have been all that could be desired. "We had some failures in lupus vulgaris, but they were failures which, I believe, may be reasonably attributed to the fact that it was impossible, on account of the patients, to carry out the treatments satisfactorily." There is surely no other method of treating lupus vulgaris that stands in the same class with X-rays, except Finsen's method, and the results from Finsen's method are as good, but Pusey believes that he can duplicate any of the results of Finsen's method. X-rays have certain very decided advantages over Finsen's method, for the results are more rapidly obtained; the treatment is applicable to mucous membranes; it will reach lesions much more deeply situated; it does not require the aid of supplementary painful, mechanical or caustic methods of treatment; there is no discomfort from the application of pressure to the surface to drive out blood; and the treatment can be applied at one sitting to large areas, while in Finsen's method it is impossible to treat more than about one square centimeter of diseased tissue at a sitting.

After an extensive experience in the treatment of tubercular glands, especially those in the neck, Pusey's experience has been variable, thus, in the treatment of primary cervical adenitis without involvement of the skin, in many cases reduced the size of the glands, and by long continued treatment to cause them to decrease to the point of disappearance. In other cases there has not been much improvement. In the treatment of cervical adenitis, in which there was already involvement of the skin, results have been more positive; in nearly all cases it has been possible to cause healing of the sinuses and distinct improvement in the condition. His experience in tubercular joint has not been extensive. In some cases the rays have not appreciably affected the condition.

Pusey's experience with epitheliomas now covers a large number of cases, including lesions of all descriptions, from the smallest epitheliomas to large lesions, and the results which have been obtained have given him the utmost confidence in the use of the X-rays in this condition. I will quote his own words: "I am almost prepared to say that I believe that any cutaneous carcinoma can be cured with X-rays. When I say cutaneous carcinoma I mean to exclude metastases or extensions deep into the underlying structures; but this exclusion does not limit the application of this method to cases that are easily amenable to surgical methods, because there are still left certain lesions which from their extent are beyond surgical intervention, and numerous other lesions in which surgical treatment is unsatisfac-

tory or undesirable, if not impossible. As to the class of epitheliomas which are suitable for X-ray exposure I believe it may be said broadly that all epitheliomas are suitable for this method of treatment except those cases in which conservative surgery requires the removal of contiguous glands. For epitheliomas in certain localities the X-rays offer particular advantages on account of the favorable character of scars that result. This applies especially to epitheliomas on the nose, of which I have had many cases, to epitheliomas on the ears, of which I have had several cases, and especially to epitheliomas on the eyelids. I have treated by this method several cases of epithelioma on the lower lid in which there was no involvement of the deeper tissues of the orbit, and in all of these, except one in which the patient would not allow sufficient treatment, a successful result has been obtained without interfering with the function of the lid or in any way affecting the eye. The unsuccessful case shows improvement that has remained permanent for two years. There has not been any relapse in any of the others, and one has been well two and a half years. Among my cases of epithelioma on the nose are a few successful cases of very extensive epitheliomas, involving the tip and the alæ of the nose, and the contiguous parts of the cheek, which had failed of relief from operations, or in which surgery offered no prospect of relief except by extensive and very mutilating operations. One of these cases is among those I demonstrated three years ago symptomatically cured, and this patient remains well now. There is a type of epithelioma of the nose which we fortunately see rarely, which is situated deep in the tissues, and is of very rapid growth. When patients with this type of lesion come under observation the nose is usually almost completely destroyed. There are large nodular masses at the border which I melt away rapidly with great destruction of the tissues. I mention this type of lesion because in two cases of this sort that I have seen, one of which, I thought, had adequate treatment, X-rays did not materially check the course of the disease. Likewise, I have failed of successful results in several extensive carcinomas of the orbit. I refer now to the very destructive lesions which we sometimes see that involve the whole orbit, and in time leave an enormous cavity. Very great improvement can be made in these cases, and the course of the disease can be almost completely checked, but I have not seen radical relief."

Treating many metastases of carcinoma in the neck arising from carcinomas in the mouth or on the lip, Pusey's experience with X-rays is that they are as futile as every other method in the treatment of the deep carcinomas in the neck. In two cases, however, in which there was a development of carcinoma in the scars after operations on the neck for carcinoma, which have been successful. In one of these cases there was a recurrent nodule in the scar on the lip, and small nodules in the scars under the chin where glands had been removed; a third operation had been advised by a prominent Chicago surgeon. In the other, a similar case, there was development of small nodules in the scar. Both of these patients have been well now more than two years. In all other cases the ultimate result has been failure. There has been distinct benefit in some of these cases in the way of relieving pain, and of getting rid of much carcinomatous tissue, but in some of the cases there has not been even this. In a large number of recurrent carcinomas of the breast, almost every one of which has been referred to him by a surgeon, and all of which were hopeless of other methods of relief, the results have been so surprising occasionally that he has not refused to treat any case unless there was already well-developed evidence of mediastinal or pulmonary involvement or of deep-seated distant metastases. It goes without saying that in such a desperate class of cases failure after failure has followed, and yet in many of the ultimate failures the treatment has been well worth while in healing ulcerations on the chest wall and in similar palliative ways. There can be no doubt that in many of these cases the course of the disease has been greatly checked, and the patients' lives have been prolonged in comparative comfort for many months, or even for a year or more. In a good many cases results have been obtained which have proved permanent to the present time. Of the three cases of recurrent carcinoma of the breast presented three years ago, one died eighteen months later of carcinoma of the lung; the second case died fifteen months later of carcinoma of the spine without recurrence in the chest wall. The third case remains well to-day; this patient had had two operations, and on the third recurrence consulted Dr. Ochsner, who refused to operate further, and referred her to Pusey in September, 1901. She then had two ulcers the size of a fifty-cent piece in the scar surrounded by an indurated border of carcinoma. When her case was reported in February, 1902, Dr. Ochsner, in referring to the case, said that in his opinion she would have died before then had she not had X-ray treatment. She has never had another recurrence. She has had several series of X-ray exposures since that time as a precaution, but has now had no treatment for over a year, and she has remained symptomatically cured for three years. She has been in good health during all this time, and has been able to earn her living. Pusey has similar cases with symptomatic cures that have persisted for from one to two and a half years.

Pusey believes that X-rays as a method of treatment of primary carcinoma of the breast should never be undertaken when operation is possible; but that something can be done in primary carcinoma of the breast is shown by postmortems that were made in two patients of mine who had been treated in this way. One case was a large primary carcinoma of the breast with involvement of the axillary glands, and with spinal involvement at the time the treatment was begun, and treatment was only given on the family's insistence. She had X-rays to the point of producing a dermatitis before she died. Postmortem, the breast was found a mass of connective tissue with little gland tissue and no carcinoma tissue left. The axillary glands had almost entirely disappeared, and there was increase of connective tissue in their place. Treat by X-rays carcinomas of the breast in which, for any reasons, operation is out of the question; but do not advise X-rays as a substitute for operation.

Pusey's experience in sarcoma, while not nearly so large as that in carcinoma, includes a considerable number of cases, and it indicates that sarcomas are affected by X-rays in practically the same way as carcinomas. He inclines to believe that they are affected somewhat more readily. As the results, on the whole, are similar to those in carcinomas of similar extent. Sarcomas are rarely found without the presence already of metastases, the results have been less favorable. Much can be done in way of palliation in many cases, and symp-

tomatic cures can be obtained occasionally.

As to prophylactic use of X-rays after operation for malignant diseases, the number of cases in which he was able to carry out this procedure, while considerable is not sufficient to allow of definite findings. This use of X-rays is logical, and its utility is strongly confirmed by the results; after operations for carcinoma and some after operations for sarcoma there are strong reasons for believing that the use of X-rays has saved the patients. A few of the patients had had repeated operations for recurrences, and under X-rays have remained well now for a much longer time than any of the intervals between their previous recurrences. In a very few, the most desperate cases of this sort that I have treated, recurrences have taken place in spite of X-rays, but the cases so treated by the X-ray seem to be better than it was before this became their practice. It has been suggested many times that possibly the danger of the spread of carcinoma or sarcoma was increased when the lesion was exposed to X-rays. In the several hundred cases that Pusey has treated he has never seen a metastasis occur that seemed reasonably attributable to the use of X-rays. Metastases have certainly not occurred more frequently than would be expected naturally.

Tousey relies more upon the fluoroscopic than upon the skiagraphic examination in stomach work with the X-ray alone. In the *New York Medical Journal* he states that with the fluoroscope the spleen and liver is just as clearly defined as if the abdomen were made of glass; these are both in constant motion, owing to respiration, and with no radiographic technique can we secure a picture that is anything like as clear as what we can see directly. Sometimes a tumefied anterior wall or pyloric extremity of the stomach can be quite positively made out with the fluoroscope, and be merely indicated with a reasonable degree of probability by a skiagraph; a tumor of the stomach is almost transparent to the X-ray, and is in constant motion during respiration, and is better studied directly.

All Tousey's work with radium and radioactive solutions, both in laboratory work and in the treatment of patients, has been with radium of twenty thousand radioactivity, and the amount use in each case has been one decigramme; the radioactive solution has been prepared by immersing such a quantity of radium, enclosed in a hermetically sealed glass tube, for four weeks in sixteen ounces of normal saline solution contained in a stoppered glass jar. The quinine bisulphate solution contains ten grains of quinine bisulphate, and five minims of dilute phosphoric acid to a pint of water. The fluorescent solution contains one-eighth of a grain of fluorescein, twenty grains of sodium bicarbonate, and one dram of glycerin to the pint of normal saline solution.

Tousey's observations up to the present time are as follows: One ounce of radioactive solution and one ounce of fluorescein solution, mixed and enclosed in the thinnest rubber tissue, placed over a twenty-five cent piece and a five-cent piece, beneath which is a kodak film enclosed in light proof envelopes of black and orange paper, as for X-ray photography; the whole being left in a dark room for eighteen hours, produces no picture when the film is developed, and radioactive solution examined in the dark shows no luminosity. Radioactive solution shows no fluorescence by gas light, or when exposed to the author's Cooper Hewitt light, a four-hundred candle-power light, of which the spectrum is practically pure violet. Nor does radioactive solution show any fluorescence with the X-ray either, when exposed directly to the light from the X-ray tube, or when the visible light from the tube is cut off by enveloping the latter in heavy black felt, so that only the invisible X-ray reaches the radioactive solution. It does not fluoresce when exposed to the ultraviolet ray, as produced very abundantly by Piffard's modification of the Gorl lamp. Radioactive solution poured over a piece of Willemite produces no fluorescence in the latter, and a piece of Willemite immersed in radioactive solution and exposed to the Cooper Hewitt light shows practically the same fluorescence, being a faint green crystalline glow as if the fluid had not been present. A piece of Willemite immersed in radioactive solution, and exposed to the X-ray, either directly or after the ray has passed through a book or a human hand, shows practically the same white glow as if the fluid was not present. A piece of Willemite immersed in radioactive solution and exposed to the ultraviolet ray from the vacuum electrode used for the application of high frequency currents, shows the same fluorescence as if the fluid was not present. The Willemite becomes a brilliant green, and the associated masses of calcite become pink. A piece of Willemite immersed in radioactive solution and exposed to the ultraviolet ray from the Gorl lamp shows practically the same fluorescence as if the fluid was not present, the difference being that the glow is a very little whiter. The Willemite itself is a very brilliant green, and the contained calcite is a brilliant pink. This fluorescence persists for five minutes after the ultraviolet ray has been turned off, and during this time, if the piece of Willemite is held close to the eye in a dark room, one seems to see a brilliant large white light. A solution of fluorescein, one grain to the ounce, gives a brilliant fluorescence when exposed to the X-ray enveloped in havy black felt, so that no visible light, but only the invisible X-ray can reach the solution. A solution of fluorescencein shows no fluorescence under the same condition of excluding all visible rays with the Cooper Hewitt light, the ultraviolet ray from the Gorl lamp, or from the vacuum electrodes. A solution of fluorescein shows most beautiful fluorescence when exposed directly to sunlight, the Cooper Hewitt light, the X-ray, or the ultraviolet ray, as produced by the Gorl lamp, or by the vacuum electrodes used for high frequency currents. A solution of fluorescein mixed with equal parts of radioactive solution fluoresces with the X-ray either direct or when protected from visible light by the hand or some other opaque substance, but the fluorescence is not brilliant. When exposed directly to the Cooper Hewitt light or to the ultraviolet ray from the Gorl lamp, or from the vacuum electrodes, this mixture of fluorescent and radioactive solutions had a brilliant golden fluorescence, and an opacity which merit for it the name of "liquid sunshine." Quinine solution in a test tube, in which is immersed a small tube containing radium wrapped in opaque black paper, fluoresces very well in the dark. Fluorescein solution fluoresces much more brilliantly under the same conditions, the fluorescence in each case being confined to the fluid very close to the radium, and when the radium is lifted from the solution the fluorescence in the fluid ceases, and no radiance is visible from the radium through the black paper in which it is wrapped. No peculiar appearance is observed when a test tube full of quinine solution, in which is the small tube containing radium, is ex-

amined with the X-ray fluoroscope. But when such a tube full of quinine solution, alone or mixed with radioactive solution, is enclosed in a dark box and exposed only to the invisible X-ray and looked at with the naked eye, very good fluorescence is visible. In patients, to whom radioactive solution has been given subcutaneously or by the mouth, no disturbance of any kind has been produced. Four-fifths of an ounce of radioactive solution were injected into the lumbar region of a cat weighing twenty-four hundred grammes, and the injection was repeated every two or three days for a week. There was at first slight looseness of the bowels, which was thought to indicate that the injection was too large, and the smaller amounts used subsequently produced no undesirable effect on the cat at all. Half an ounce of the radioactive solution was injected into the lumbar region of a rabbit weighing nine hundred and ninety grammes, and this was repeated every day or two for a week. The only perceptible effect was that he was livelier than before the medicine was administered. A dog weighing about twelve pounds was etherized and radioactive solution injected through the left femoral vein; the right common carotid artery has been opened and connected with a mercurial manometer registering the blood pressure upon a skimograph. At first thirty cubic centimetres were given very rapidly, and the same quantity was added after a five-minute interval. The only effect noted was a slight rise in blood pressure when the infusion was begun.

A rabbit weighing five pounds was killed, and the abdomen opened; the stomach was filled up with a mixture of radioactive and fluorescent solutions. The pylorus and cardia were ligated and the abdomen sewed up. The animal was examined by the X-ray in the dark, and all visible light from the X-ray tube was excluded. No fluorescence was visible to the naked eye, but with the fluorescope the stomach region seemed very transparent and could be mapped out exactly; an X-ray picture was then taken with the animal upon the table. The picture presented the outline of stomach in a brilliant manner; then the stomach was emptied of all its contents and another picture was taken under the same conditions in every particular. Tousey's conclusions based upon observations up to the present time are:

1. Radioactive and fluorescent solutions, as prepared above, are innocuous when given by the mouth or subcutaneously. 2. They do not produce, either singly or in combination, sufficient fluorescence to be of value in the examination of the stomach, without the use of some additional light to excite their fluorescence. 3. They will in some cases be of the very greatest assistance in the X-ray diagnosis of stomach lesions. 4. They will in some cases be of value in the X-ray treatment of stomach lesions.

"Gallstone Cures" are claimed by a German "Heil-Magnetopath," who advertises that by administering a strong purgative and then some oil he can expel gallstones in two days. Peculiar yellowish balls are evacuated, which contain, however, none of the ingredients of gallstones. The Board of Health of Carlsbad have warned the public against paying the excessively high rates charged by this magnetopath for what is practically a simple purge. This treatment is moreover liable to be very injurious to persons with existing inflammation at any point in the intestines.

PHYSICIAN'S FINANCIAL PROBLEM.

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LET us devote a half hour to some consideration of one of the most important and universally-felt interests of our profession. The subject of this paper has direct reference to the most vital interest of the majority of physicians, especially of our younger physicians, namely, their livelihood. The stress and excesses of the times have rendered thoughtful consideration of the financial problem the "question of the hour" among thousands of medical practitioners. Some years ago, in the Philadelphia County Medical Society, the question took the direction of an examination into the legitimate uses and practical abuses of free medical dispensaries in this city, with a view to a better protection of the general practitioner by the correction of impositions connected with free charitable institutions. Furthermore, in the Northwestern Medical Association of Philadelphia, in effective working order at that time, the physicians' financial problem assumed more definitely the shape of devising a better mode of securing professional remuneration for services rendered to those able to compensate the physician; and also, some efficacious plan of mutual protection against the impositions of such unprincipled individuals as are either almost, or altogether, indifferent to the professional claims of physicians for services rendered.

All grounds of financial support need to be replowed every year and the seeds of conscience sprouted anew to promote an average harvest of comfort for the physician's family without the humiliating burden of debt. The financial problem of doctors should be based upon grounds of common justice. These timely remarks have no disparaging reference whatever to any of the honest, worthy people whom it may be our fortune to number among our patrons and friends—persons who, we are proud to say, are conscientiously considerate and punctual in substantially remunerating their medical attendants. Narrowness of margins for paying the doctor is a truly common condition among a large class of honest, even industrious, people. I speak the natural feeling of medical gentlemen in general when I admit that we esteem it a cherished pleasure and honor to enjoy the confidence and patronage of such; and we often cordially reciprocate their friendship, as well as their moral comprehension of Golden-Rule justness toward us, with an appreciation of most regardful character. We will not deny that there are affinities welcomed in medical service that brighten the path like lamps that dispel the gloom of many trials. When we serve such patrons, we serve them with our hearts as well as with our intelligence, and baptise our professional efforts in their behalf with invocations of blessings and benedictions of love! It is a gratifying comfort to declare that, in such cases, our financial problems need no solution! They are already the clarified essence of our professional vitality—to some of us the tangible business buoys upon which we "live and move and have our being" as doctors. No men so much as the members of the medical profession have constantly in mind the words of the Good Physician: "Ye have the poor always with you," and every true physician does not propose to withhold professional aid from the unfortunately

needy, who have not cash means with which to compensate medical service in illness.

There are the crippled and infirm, shattered by the violence of misfortune and bent by the weight of years; there are the destitute, made so by the devastations of grievous circumstances; there is the widow, veiled by the cloud of acute bereavement and the impenetrable gloom of lonely destitution; there are the impoverished children of tender years, upon whose lives the clouds of pitiable orphanage have inexorably settled. Upon the altar of the necessities of such as these the true physician is ever willing to lay the offerings of considerate humaneness. But our attention must apply positively to another class of individuals—one that through indulged defect of moral principle, in conjunction with certain demoralizing, even pauperizing customs of physicians themselves, seriously, and sometimes well-nigh ruinously, embarrass the temporal comfort, the essential progress and success of the physician's life, as well as the comfort and prosperity of those dependent upon him for worldly support.

As a rule medical services must be and are rendered on faith. While nearly all other forms of business may be conducted on a practically cash basis—a basis where there may be protection of capital and labor from the consuming maw of the idle, the improvident, the dishonest, and the habitually derelict—the business of the medical practitioner in general is radically and practically a trust business, with no indemnifying securities, with all the advantages on the side of, and in the hands of, those for whom the capital and labor are expended. I recognize the over-lauded humanitarian conception of this unequal relation between physician and public. In an ethical and esthetic sense this humanitarian idea—this all work, all trust, all faith vision of the physician's mission—is very beautiful in its rainbow idealism! But the flame-colors of its idealization fade away, and the glow of its transient enthusiasm reduces its chief glory to the dull ashes of absurdness. The physician's progress in life may be said to run on a double track. One of these is the direct and continuous line of professional duty and work—the other is interminably interrupted by brakes and side switches of the relief of professional compensation. Men and women not a few are adroit artists at drawing a "poor mouth" and laying on their pallid colors of self-declared poverty. They paint with rare skill and strength of force: "Yes, I will, doctor, when I have it to spare," and "I would, gladly, if I could." Have we not all come under the scant mercy of these "poor mouth" deceitful, can't-pay experts, who meanwhile gratify their sumptuous appetites with every coveted luxury available, flit from one place of amusement to another like fashionable butterflies of pleasure, including their regular summer flights to expensive resorts like gilded birds of paradise? And whose money enables them to make these ostentatious exhibits? They usually put on the flourish of many airs and liberal expenditures for public display. There are presumptuous individuals who deem it as species of favoritism to bestow their patronage to a successful doctor so long as he is their devoted servant;—while he, through fear of losing patronage and greatly needed money by venturing to disturb the surface of said patron's complacency, tugs along, deeper and deeper, until the attenuating thread of his life at length snaps and the grand total is cancelled by the cold finger of death on one hand, and by his patron's quiet departure on a European trip on the other hand.

The scenes of the physician's life are among the realities of pain and suffering, disease and death. There is nothing about this that is festive and exhilerating to mind and body. Perhaps in the hour of severest duty the physician is harassed by financial embarrassments that prey like a paralyzing incubus upon his mind, and seriously militate against the freedom and completeness of his enlistment into all the bearings and indications of cases under his professional care. Through the thoughtless indifference of persons under more than pecuniary obligations to him, he may be compelled to squeeze through rough and rugged difficulties, day after day, that in all common justice should never have impeded the progress and efficiency of his high mission. "Custom makes law," and a bad custom makes a bad law. A defective law becomes the law of drawbacks. The law of continuous work-and-wait is the law of straggling shifts and dead weights. Any rule or custom that enjoys passive deference to an effete idea, from which there have evolved galling discomforts and tremendous injustice to the faith and toil of responsive physicians, is the rule and custom that grafts work and service into the scoop of one side of the scales and lets the other side go up empty.

Unfortunately there is a leader toward this dilemma. The acrimonious rivalry between physicians has often excited remarks of surprise. Doctors are of small account unless confided in. The new man called in, because of the chafe of the other man's unpaid bills, frequently by innuendo or victorious malice, stabs in the back the man he is gladly flattered to supercede—and all that is owing to the faithful servant is denounced and renounced as the shortest cut out of a heavy pecuniary obligation, the discharge of which is sorely needed by the man displaced. There are men in the profession who consider the medical arena a public claim-graft from rim to rim, whereon they propose to carve their individual way, ruthlessly, perhaps stealthily and maliciously, with the stilette that bleeds other's reputations! There needs be some wide-awake recognition of guerrilla invaders of the medical province who desecrate its sancity and cheapen its dignity in the eyes and appreciations of vacillating people. I submit that sheer ferocity is not the ruling characteristic of even animals roaming the forest if they are sufficiently fed. The keen-scented rivalry between physicians has too often had prejudicial effect upon an important part of the public, that has easily learned to forego the need of paying one by calling in another eager to take the vacated place. The lack of fraternal chivalry easily demoralizes the doctor's pay-roll. Much of the honored code of our fathers in medicine has outlived its appropriateness of application. The world is daily growing more shrewd and full of cunning in all grades of society. Daily more and more people are endeavoring to live by their wits and by beating the resources of others. Current necessities have increased. Wants grow numerous and pressing. Social demands exact to the limit. Under these conditions the man who

works hardest and waits longest without his pay is the man who is most certain to reap little beside a harvest of perplexing failures and dissatisfactions at the hardest time of life.

A panacea for the discomforting complications of our financial problem is perhaps unattainable. But remedials for their alleviation should certainly be brought within the reach of the general practitioner. The aggression of numerously increased hospitals in city and country, that cut quite in half the medical and surgical work of the time, should be resisted. Drafts for enormous sums of money from the State treasury, money collected by the process of public taxation, and appropriated profusely to cover wasteful expenditures in favor of and by these rival institutions, make them powerful monopolies in the field of general practice. These profligate appropriations by legislators, who but half understand the clinical situation, directly tend to pauperize the public estimates and instincts on lines of financial compensation, and very materially and seriously shrink the revenues of physicians in general who must depend on marginal incomes by private practice. If the hospital competition were less numerous, and limited its free service strictly to the indoor necessities of those who are admitted, instead of spreading abroad among outdoor patients who can be reached because of funds drawn from the State; and if said hospital outfits furnished the expense of treatment and nursing and board to the actual poor only, as it is the assumed and legitimate province of the public hospital to do, then the scope of available practice would remain unimpaired by this multiplying moth of "charity" that so ravenously consumes the texture of a square professional chance for comfortable and honest livelihood. Then the natural aversion of physicians to asking their patrons for pecuniary compensation has generally led to such postponements in presenting bills and insisting on their early recognition that many people have come to feel that a doctor strains a point of friendly etiquette if he presents his bill at all, and to call twice for his money is an insult! Physicians often find it so unpleasant to repeat their calls for purposes of collection that, after a few unsuccessful attempts with delinquents, they give it up for the time rather than subject themselves to the humilities of the distasteful task. This phase of the problem, again, is a demoralizing one to the crafty and dishonest, who purposely hold back their payments until the pursuit for money be abandoned through weariness or disgust. There are errors of certain of the public practice toward our profession of trust-work that woefully need correction. He who habitually writes prescriptions to be filled at the drugstores for every ailment medically treated, simply passes over to public possession the resources of professional prestige and income for a decade. Hit or miss, the laity will essay to treat themselves and even their friends and neighbors by the label and number on the druggist's bottle or box, while the dethroned doctor is scratching holes in his empty pockets. Self-defense is at least the second law of life. The average physician cannot afford to throw down his own fences to the invasion of even the druggist's interests because he holds upon his file the doctor's valued formulas for indefinite repeats. Furthermore, the physician's financial problem must suffer when he innocently takes the hook of the astute manufacturer who adroitly urges that, for certainty, the original bottle or package as labelled with name and full directions of the maker be prescribed. Our dear enterprising friends engaged in the pharmaceutical end of the problem of our practice so obligingly send out printed instructions of exactly how we should prescribe their specialty products to the public that is constantly watchful of chances to take its own risks within limits! The doctor who does not or cannot see when he dog-cheap gives away his own professional prestige in exchange for the therapeutic prestige of wide-awake manufacturers, should not murmur at the shrinkage of his bank credits. Other men in business are in business for profits that can be materialized through astute business management —they are not in business to expend caution and pecuniary care on men who lack protective instincts to such degree that they consent to help the other fellow first and best. The writer is an old physician, who has not been "laid upon the shelf" of disuse by giving himself away needlessly. He controls his own formula and therapeutics with all his patrons—because he is not too indifferent or too lazy to provide his own laboratory according to his own refinement of discrimination and practical needs. No man can supplant him in the production of his medical reliefs to the sick—and the year 1905 faced him with no deaths! That is the sweetest consolation of success. Let the tender, loving doctor KEEP all his friends, and he is always sure of practice!

One indispensable condition for the correction of financial errors will be found in a cordial, steadfast union of the medical profession, or any considerable given quantity of medical influence between the coterie whose work interlaces through the same community, and whose interests should be directed toward the defence of the mutual interests of each and all together—barring any Judases who are only on the alert to garrote or stab in the back the professional brother they can betray! And there are such! Look out for them! Study them—and mark them forever! In all communities the physician's financial problem needs unswerving demonstration that the medical profession respects itself enough to expect and to insist on receiving a reasonable pecuniary remuneration, and that, also, with considerate promptness by which the physician shall maintain his business repute among his fellow men. "Where there's a will, there's a way." In the prosperous business conditions prevailing in this country, there are few indeed who are not able, by considerate economy, to compensate the physician with money value—more able to do so than the physician is able to lose his earnings. Health is the most important possession in life. A substantial recognition of the doctor's dues should constitute the first and superior obligation for considerate adjustment—unless the medical attendant allows the conscience of his patrons to lapse into the habit of shameless dereliction. But a grand clarifier of the physician's financial problem flows from the rule to scrupulously avoid making charges to families greater than they can comfortably afford to adjust. A moderated income from a family for twenty years nets superior returns above an initial overcharge never settled. People learn to love the man who considers their circum-

stances in life and metes his demands according to the measure of their ability to respond, and the doctor who is loved is the one who is best compensated. By accustoming all classes of patrons to an early or earlier rendering of bills, while the amount is moderate and the service is fresh in memory and appreciation, the satisfaction of both people and physician will be better assured, collections will be facilitated, and a healthier financial morale promoted. By a repelling law of human nature carrion is unwelcome to the senses, and the "dead horse" of old bills is always obnoxious to the comfort of both physician and patron! One account that dismays usually settles the clientage forever—and few general practitioners can afford to sustain a life-long loss.

If there is presumptuous lack of response to statements, and the necessary perseverence of the task of collecting be too distasteful or impracticable to the practitioner, there remains the excellent plan of the mutual employment by a community of physicians of a polite, reliable, earnest, courageous collector, who can systematically prompt and collect from a large number at the same time, and in a few months perform the disagreeable task of stirring the dilatory, rousing the indifferent, pressing the dishonest, and marking the "loafers and deadheads." While a trustworthy and accomplished collector is doing this for one, he can do it for all—thus placing every physician employing him upon a fairer and better basis for knowing exactly the financial status of his business. But while single-handed effort must naturally fail, united effort must succeed. It has often been the conviction of the writer that in many cases the adoption of a system of premiums and penalties by physicians might practically stimulate and facilitate a more satisfactory adjustment of their finances with many debtors. Such is the system with much other business. Persons who might pay more promptly often do not, for the reason that there is no practical inducement, while the tendency to indefinite postponement is encouraged, because there is no disadvantage accruing to the postponer. I believe there is propriety and practical wisdom in establishing the habit of rendering accounts or medical services at the close of each consecutive service, and that the "terms" of the physician, as in other business, be printed on the blank form of their bills; these terms to embrace the incentives to promptness by per centum rate of discount on early settlement; and also a statement of legal per centum rate of interest to be charged after the expiration of a reasonable length of time if payment be deferred. Some persons habitually in arrears might be encouraged thus to make a new start, and put themselves upon a more reputable record. The present is an age when men of moment must "do things" in order to be recognized, then why should the doctor float along too passively, like a chip in an eddy, to attract even the attention of his friends between times of routine services. To have folks say: "We have a good doctor, he knows his worth and wants his honest money," is a better advertisement for him than to be never mentioned because he is never paid.

In his financial estimate, the physician must remember that he is not a mere driver of his horse or automobile, entitled to the wage of the common mechanic, at so many cents per hour: but the physician needs always to remember that he is dealing with the emergencies between health and illness, life and death of the human being on which must stand or fall all the happiness and prosperity and availability of his patron. This service is money's worth beyond compute. The skilled protector of human life is never paid—unless he imposes on the ability of his friends. A lady of acute perception lately said to the writer: "Dr. Blank has done wonders for a difficult case in my house, but he will never make any reputation while he only charges twenty-five cents for his office fee." That is the estimate this doctor is putting upon his personal values! He is relatively poor—he will stay poor because of the impression he makes of his value. He is competing with competitors—but gets no more business at half or quarter price than he might have at decent values for the quality of the service required. The doctor who charges twenty-five cents for a professional service is no more likely to receive his pay than if his price was one dollar—unless his patient is poor but honest, and has provided herself in advance with a silver offering of a quarter! There is a class, and a very cheeky one, who systematically defraud the physician, because his service is naturally a trust service. A woman of penny-pinching cunning came to my office a month ago. She was near fifty years of age and pregnant unexpectedly. Said she anxiously desired to talk with an experienced physician about her serious situation, and would pay him for his time. At this stage of her act she adroitly exhibited a dollar bill in a fumbling way from beneath her cape. My glance of it assured me that my time would not be ruthlessly wasted. I went wisely and patiently over her situation with encouraging hope. She had many questions to be explained. When she had satisfactorily finished on all points and obtained my assurance that I believed she would be safely delivered of her belated child after eight years in "change of life," she rose to depart. As I looked at her expectantly, with great complacency she said: "Doctor, I did not bring my pocketbook along with me, I will send a dollar to you as soon as I get home. Can I not leave it with your wife, if you are not in at the time?" "Certainly," I said, as a gentleman. But I have never seen that woman since or her dollar! She was an old door-knob fraud! But what then? She had interrupted me when engaged on an earnest contribution for the New York Medical Times, a noble and worthy publication of highest standing—and that woman simply mobbed me in my legitimate service. Is it not more than simple justice that in their financial problem physicians come mutually, as protectively as possible, to a knowledge of who they are that constitute the class of bums on the doctor's sense of humaneness? The present is the time to remember that the finances of the physician are as important as are the finances of the banker, the stockholder, the skilled mechanic. Are our rights inferior to the rights of the merchant, the blacksmith, the bookseller, the lawyer, or the minister? There is no reason why so many physicians should supinely drift along with the troubled current of close and adverse circumstances. A Philadelphia doctor of considerable standing was sued yesterday by his wearied wife because he did not have for her or had not enough money to feed the

family! But we must discard petty jealousies. The despicable practice of some physicians, who hope to win practice by maligning the qualifications of other physicians, has had no other than pernicious effect on the pecuniary morale of the public. "A house divided against itself cannot stand," is not a maxim for a day, but is an eternal truth.

THE PHYSIOLOGY OF NUTRITION. A COMPARATIVE STUDY

BY F. B. BRUBAKER, M.D., MIFFLINBURG, PA.

Part I.

OF the five or more properties with which living protoplasm is endowed: that which relates to nutrition or the absorption within itself of nutrient material and, therefore, which directly concerns the assimilation of the same, is undoubtedly first in importance. In the lowest forms of life, composed as they are of unicellular organisms, and in which no specialization of function has as yet obtained, this is accomplished by all parts thereof, that is, food is taken into its substance at any or all parts, and circulates throughout its whole substance in equal measure. Two great series of nutritional activity is manifest in organic structure, and the dividing line between the two, viz., plants and animals, is largely that of the manner, or way, in which this is possible, rather than the material absorbed; for, as we saw in a former essay, plants can take up the carbon, oxygen, and nitrogen necessary to their growth from mineral compounds which are soluble in water. Plants can also take their nitrogen in the form of ammonia or nitrates, and their carbon in the form of carbonic acid, consequently they require no mouths or digestive apparatus; and their food being soluble in water they absorb at all or many points of their surface. There are in all the higher plants two distinct currents, that of the ascending and that of the descending sap, and the former of these two fluids should be compared rather with the chyle than with the blood of animals, indeed it being plainly evident to the student that the perfected structure of circulating fluid as we find it in man (the highest type of organism) finds an exact and corresponding counterpart, at all points in that other great series, viz., plant or vegetable structure, and yet, as needs no comment, at all points differing. The ascending sap consists principally of water which is imbibed with inorganic substances in solution by the delicate tissue at the soft extremities of the root fibres, the ascending current being entirely regulated by the demand for fluid occasioned by the action of the leaves. The descending sap consists of fluid having undergone a preparation or elaboration in the leaves, which adapts it to the nutrition and extension of the structure, and to the formation of the various secretions of the plant. A great part of the fluid of the ascending sap has been lost by exhalation, and the remainder thus concentrated receives a large additional supply of solid matter through the agency of the green cells of the leafy part which takes in carbon from the atmosphere, so that it now receives or includes a considerable amount of gummy matter, in a state prepared for being converted into solid tissue as well as other numerous compounds. Now this elaborated sap is then conveyed into various parts of the system through the agency of a network of vessels which takes its origin in the leaves and extends along the branches to the stems and roots, chiefly in the bark of those parts. These vessels being strictly analogous to the capillaries or smallest blood vessels of animals, but differing from them in this, that the cappillary network of animals communicates on either side with larger trunks, being formed, in fact, by the interlacement or anastomosis of their minutest branches, while the network of nutritive vessels in plants is everywhere continuous with itself, not having any communication with large vessels, so that the fluid prepared in the leaves commences a circulation there which is continued on the same plane until it has found its way to its remote destination in the roots. From these continuous vascular tubes which run uninterruptedly, we might say from top to bottom of all vegetable life, or from leaf to root, and which turn neither to the right nor to the left, that is, devoid of all collateral circulation, as in higher animal life, a condition of the circulatory system very similar to this exists in several of the lower animals, in the very lowest no blood vessels are required, for the same reason that no sap vessels exist in the lowest plants, viz., because every part absorbs and assimilates nutritive fluid for itself, each part having retained for itself that primary function of the individual cell, absorption and assimilation; so that it does not require a supply from vessels. As in the seaweeds the whole surface is nourished by direct absorption from the fluid in contact with the external surface, every part of which is endowed with the same absorbent power, so that in the Polyps we find that the whole surface is nourished by direct absorption from the internal surface, which forms the lining of the digestive cavity. Thus no circulation is necessary in these simple animals, either for the nutrition of their tissues, or for the aeration of the fluids. In the lower Entozoa or parositic worms we have a digestive cavity channeled out in their soft gelatinous tissues, and from the walls of this the nourishment is drawn by the several component parts of those tissues without the mediation of vessels, even the embryo of man in its early condition showing the stages through which it has been evolved by repeating this very type of structure, and consisting of an aggregation of cells, each of which absorbs for itself from the nutritious fluid with which it is surrounded; and therefore going through all its functions independently of the rest. Proceeding now a step higher, we find the first appearance of proper vessels in the higher Entozoa and in the Acalephæ of Jelly Fish, these vessels take up the nutritive fluid from the walls of the digestive cavity on which they are spread out, just as roots of plants do from the soil, they then unite into trunks by which the fluid is conveyed to the more distant parts of the structure in the same manner as the ascending sap is conveyed to the leaves, by the vessels of the stem and branches, and these trunks again subdivide and form a network of capillary vessels which are dispersed through the several parts of the fabric; some of them being very abundantly distributed upon a portion of the surface which is particularly destined to perform the respiratory function. Through these capillary vessels the fluid seems to move in very much the same manner as through the system of anastomosing vessels in plants, that is, its motion

is due rather to forces which are developed during its circulation than to forces derived from the contractile power of a propelling organ, but there is this difference, that after having traversed the minute vessels and yielded up to the tissues a part of the solid matter which it contains, the fluid is collected again by other trunks which convey it back to the point from which it started; there it is mingled with the fluid that has been newly absorbed, and with that which has undergone aeration, and is then distributed as before through the general capillary network of the body. But as we ascend the animal scale, we find that provision is made for a more regular and vigorous flow, or circulation of the blood, than that which exists in the lowest classes. Thus in the Echinodermata a portion of the principal vessel is peculiarly endowed with contractile power which may be seen in constant pulsation like the heart of the higher animals, alternately contracting to propel the fluid it contains through the vessels that issue from it, and then dilating to receive a fresh supply from the vessels that pour their contents into it, a similar provision being visible in the lower tribes of worms in which this contractile vessel lies along the back propelling the blood forward by a sort of peristalic movement through trunks which pass out at its anterior termination and receiving it again after it has circulated through the system by vessels which enter at its posterior extremity. In the higher order of worms, in the Myriapoda, or Centipede tribe, and in Insects, we find this dorsal vessel divided by transverse partitions, containing valves, into separate cavities, which answer to the different segments of the body, each of these being at least to a certain extent a heart to its own segment receiving and propelling blood by trunks which open into it, but at the same time participating in the general circulation, a large portion of the blood being poured into the hindermost segment, transmitted forwards, from cavity to cavity, through the valves which separate them, and at last propelled through trunks, that issue from the most anterior segment. In some of these trunks we find that two or three pass round the œsophagus and reunite below it so as to enclose it in a sort of collar and then form a main trunk by this union, which runs backwards along the under surface of the body and which distributes the blood to its different organs by lateral branches, these subdivide into a capillary network and the returning branches or vessels which originate in this network pour the blood which has circulated through it into the posterior cavity of the dorsal vessels. Still it is very evident from the observation of the circulation in those species in which the whole process can be distinctly traced under the microscope, that the contractile power of the dorsal vessel is far from sufficient of itself to sustain the circulation, and that the movement of the blood through the capillary network, is in part due to forces developed during its progress, being often retarded, or accelerated, in particular spots, without any visible change in the propelling force of the central organs. Now in most of these animals there are distinct organs of respiration confined to some one part of the body and we often find that the vessels which convey blood to them are furnished with distinct contractile portions like so many supplimentary hearts for the purpose of propelling the blood through them more energetically. Just in proportion as we ascend the series of articulated animals do we find for the most part a more vigorous and regular circulation both for the nutrition of the system and for the transmission of the blood through the respiratory organs, but there is an exception in the case of insects, for in this class the circulation is much less vigorous than it is in other articulated animals of similar complexity of structure, although we might have anticipated that the extraordinary activity of their movements would necessitate a corresponding rapidity in the circulating current, especially for the purpose of conveying an extraordinary supply of oxygen to the muscular and nervous systems, but this is provided for in another way, the air being conveyed to these tissues not through the blood but by direct transmission through the minute ramifications of the air tubes, or tracheæ, which penetrate the very smallest organs of the body. Now it is a very striking analogy that the circulating apparatus in the embryo of the higher animals at a period just a little advanced beyond that just alluded to, presents a similar structure, for the heart at the time of its first formation seems like a mere dilatation of the principal vascular trunks, having thickened walls in which after a time muscular fibres begin to be developed, and the contractile power manifests itself. The pulsation of the heart, however, does not seem to extend its influence immediately through the vascular area, the capillary circulation in which remains for some time in great degree independent of it. There is no resemblance in form, however, between the dorsal vessels of insects, and the incipient heart of the higher animals, since the latter is never much prolonged and speedily becomes doubled upon itself, and its first division into cavities is merely for the purpose of separating its receiving portion or auricle, from its propelling portion, or ventricle; nevertheless, the general condition of the circulating system is much the same in the two cases, and in function is further alike in this, viz., that it is not always easy to show that the vessels have distinct walls as they frequently seem like mere channels excavated in the tissues. Again as we approach the class of Mollusks we find that the moving power of the circulation is more concentrated in the heart than is the above, for this organ seems no longer like a mere dilatation of the vascular trunk, but is a distinct sac with muscular walls, usually having at least two cavities, an auricle, and a ventricle, with the course of the circulation as follows, viz.: The blood expelled from the ventricle of the heart passes along the main systemic artery or aorta, which distributes it to the body at large. It is then collected again and transmitted to the respiratory organs in which it is exposed either to the air contained in the surrounding water, or (as in the terrestrial mollusks), more directly to the atmosphere, and from these it is returned to the heart to be again transmitted to the system. Thus we see that the heart of these animals receives, and impels, aerated blood, and that its office is to send that blood to the capillaries of the general system. Indeed there is a very curious phenomena to be observed in the circulation of some of the lowest mollusks, namely, the continual reversal of the course of the current, the heart in these animals being much less perfectly formed than in the higher classes, which seems more like the contractile dilatation of the principal trunk

which is the sole representative of that organ in the Echinodermata. The circulating fluid is sometimes transmitted first to the system and afterwards distributed to its different parts by the ramifications of the main artery, it meanders through the channels excavated in its tissues and then flows towards the respiratory surface, after passing over which it returns to the heart, but after a certain duration of its flow in this direction, the current stops, and then recommences, in the contrary direction, proceeding first to the respiratory organs, and then to the system in general, so that, it would seem as if in this, one of the lowest forms of animals possessing a distinct circulation, the central power were not yet sufficiently strong to determine the course which the fluid is to take, so that it undergoes continual vacillations. So much, then, for the great class of invertebrates, as likewise for vegetable structure as regards the starting with fishes, we have as in mollusks, a heart circulation.

RECENT ADVANCES IN HANDLING TYPHOID FEVER.

BY A. N. ULRICH, M.D.

LAVROFF operated upon thirty-three patients with perforative peritonitis complicating typhoid fever, and of these only four, or twelve per cent., recovered. This percentage is lower than those reported by other authors, but Lavroff thinks the percentage of recoveries after these operations is very small, but whether this mortality from perforative peritonitis is due to the typhoid infection itself, or to other causes, cannot be definitely settled as yet. In the patients who recovered there had been an extraordinarily good condition before the operation, including a good pulse, and absence of collapse. In those patients who died, even when the operation was performed immediately after the operation had taken place, there was a marked collapse, a small rapid pulse, great depression, frequent vomiting and extreme abdominal pain, but these symptoms should not deter operating, but, on the contrary, should hasten it. There is scarcely a modern surgeon who is opposed to operative treatment.

Smallman tested the feasibility of preparing a bacteria-free and fluid vaccine, of standardizing the same, not in terms of bacilli, but in terms of the soluble immunizing substance it contains. The material was obtained with the aid of the cold grinding method of MacFadyen and Rowland, the typhoid organisms being grown on the surface of agar bottles, at blood-heat, for 20 hours. The growths were washed off with salt solution and the bacteria spun out in a high speed centrifuge; these spun-out bacteria were reduced to the consistency of a pasty mass on the surface of a Chamberlain filter, and triturated at the temperature of liquid air; then the mass was taken up in salt solution and centrifugalized. The cell juice was equivalent to a 10 per cent. solution of the intracellular constituents. This "typhoid cell juice," contained from .15 to .2 per cent. of solid matter, and was injected subcutaneously into guinea pigs, and after varying intervals of time the protection afforded was tested by the intraperitoneal of virulent "typhoid cell juice." The smaller dose had the same protective effect as the larger, even after a period of eleven days, while a protective effect was demonstrable with a dose of 1/1000 cc. at the end of seven days. Then a series of animals which had been inoculated with 0.25 cc. of the cell juice was tested on the tenth day after injection, and out of 5 guinea pigs 4 survived an injection of from 3 to 5 lethal doses of the typhoid bacillus. Smallman believes that a bacteria-free and fluid typhoid vaccine can be prepared by the mechanical method employed, and that a very small amount of the soluble constituents of the typhoid organism is necessary for active immunization.

Memmi, studying the conditions under which typhoid bacilli appear in the blood of patients, found that the frequency was proportional to the severity of the disease; the best time to find this germ in the circulation was the period between the end of the first and the beginning of the third week, but in severe cases the bacilli were found later also. These bacilli isolated from typhoid blood possessed only limited motile powers, and at times were found united into groups, showing the high agglutinating powers of the blood. The method of large dilutions is well adapted for the isolation of the typhoid bacillus from the blood, and no relation exists between the appearance of the typhoid bacillus and the presence of the Gruber-Widal reaction. The typhoid bacilli brought into contact with typhoid serums show feeble agglutinatinf power, increasing with the length of time the germs are cultivated outside of the body. There was not much difference, however, between the bacillus of typhoid fever grown in the laboratory and one just isolated from the blood of a patient as regards the Widal reaction. Other germs besides the typhoid bacillus were found, especially the streptococcus and the diplococcus of Talamon Fraenkel, when the case was complicated by pneumonia. Typhoid without intestinal localization is not so rare as has been hitherto supposed.

Typhoid bacilli are quickly killed by human blood and yet typhoid bacilli increase in this disease in this medium; this phenomenon is explained by Hektoen as possibly due to the typhoid bacillus neutralizing, by the production of its destruction, the complement in the blood serum. He emphasizes the facts that pneumococci are demonstrable in the blood in certain cases before the primary symptoms can be detected, and that the subcutaneous or intraperitoneal injection of pneumococci into rabbits may give rise to foci in the lungs resembling the lesion of lobar pneumonia, and that injection of pneumococci into the bronchi causes a rapid absorption of cocci into the blood; the destruction of pneumococci being largely due to leucocytes, since the blood serum itself is without destructive effect and high leucocytosis is indicative of a favorable prognosis. The leucocytes seem to exert a defensive rôle in pneumonia, and it seems that alcohol and ether have a paralyzing effect on them, as shown in rabbits.

In scarlet fever, the streptococci are in the majority of cases demonstrated in the blood; whether they are the cause of scarlet fever or not, it may be said that there is a very general invasion of the body in fatal cases. In practically all the cases of scarlet fever there is a great increase in the number of streptococci in the blood. Against the theory of their being the essential germs may be cited the absence of any general invasion of the body by the streptococci in the so-called foudroyant cases of scarlet fever. It is impossible to differentiate the streptococci which occur in scarlet fever from other familiar streptococci, and while one attack of scarlet fever gives rise to a lasting immunity, there is no evidence that an attack of scarlet fever produces any immunity to streptococcal infec-

tion. In smallpox, diphtheria, and measles, there is also frequent streptococcal invasion in the blood, yet these diseases cannot be said to be due to streptococci. He concludes that while in the cases of the majority of children dying from scarlet fever the death is due to streptococcal infection, there is still no strong evidence of a direct etiologic relationship between scarlet fever and streptococci, even though the latter are of such paramount importance in the disease. There is a great need of an efficient antistreptococcic serum; there is possibly too little care exercised against the diffusion of streptococci in scarlet fever cases in the hospitals, severe cases being placed alongside the mild ones and the chance of further streptococcic invasion in the latter being thus favored.

Since the introduction of the aloin test for the detection of traces of blood in the feces by Rossel, it has been used in the detection of hemorrhage in gastric carcinoma and ulcer, while in Naunyn's clinic this test has been used for some time in connection with typhoid cases. The result of the test as described by Patracchi states that of eighteen cases tested, eight showed traces of blood at some stage of the disease, while in the majority of cases the positive test was observed during the second and third weeks of the disease, when hemorrhages apparent to the naked eye are likely to appear. In four cases large hemorrhages occurred, generally three or four days after the occult hemorrhage was detected. Most of the eight cases were severe, though the autopsies on three of them showed that the intestinal lesions were not unusually extensive. Petracchi thinks that the occurrence of intestinal hemorrhage in typhoid is the result of the character of the infection rather than of the extent of the intestinal lesions. In some cases where the presence of occult hemorrhage was detected, the hemorrhage was accompanied by a distinct increase in the rapidity of the pulse; in four cases in which this occurred large hemorrhages resulted in three. The combination of occult hemorrhage with increased rapidity of pulse rate is a valuable index of a possible severe hemorrhage, and it seems reasonable that if by this test we can foresee the probability of intestinal hemorrhages, we will be able to reduce the mortality from this source.

While Edsall recognizes the possibility of the milk infection origin of typhoid, he believes that there is a further group in which the effects of bad milk are very often overlooked, chiefly because they are obscured by other factors present. There are cases occurring principally in persons on a milk diet, especially in those with acute infectious diseases in which the symptoms are caused by the milk used, but they are not severe enough to arouse a suspicion as to their cause, for the milk does not itself produce grave and evident infection, but it succeeds in making worse a condition that is already more or less wretched. In feeding typhoid patients only pasteurized milk, he found of 92 case of typhoid, 8 patients had diarrhœa on admission: in 5 of these it subsided in three or four days. Only 4 patients developed diarrhœa while under treatment, and one of these, a severe case, died of hemorrhage, and the autopsy showed numerous ulcers in the colon. According to Edsall, a diet composed almost exclusively of good milk is the best for most cases of acute infectious disease, especially of typhoid fever.

This same authority has studied the condition of the lymph glands in typhoid fever; in 60 cases he obtained satisfactory notes in about 36; of these thirty-six he observed in 25 the occurrence of glandular enlargement during the disease. In 4 the conditions were doubtful, and in 7 there were no demonstrable changes; while in several cases of relapse the changes in the gland could be followed, and were found even more prominent than in the primary attack. Generally the enlargement developed in the latter part of the disease, and in a number of cases the first definite enlargement was noted during early convalescence. Edsall believes that by carefully observing the glands some diagnostic points might be learned; thus in cases of tropical malaria, the glands of the patients observed showed no enlargement, while in acute pneumonic tuberculosis there was no general enlargement. Unfortunately the enlargement in typhoid tends to appear late, and would be of little diagnostic value on this account, while the degree of glandular enlargement may be made to influence the prognosis as it occurs most markedly as convalescence is approaching, and the most marked enlargement of the gland appeared in several of the mildest cases. The chief interest, however, is in the diagnosis, for glandular enlargement, unless very marked, cannot be considered a strong point against typhoid, for enlargement to the degree usually see in syphilis is not very uncommon in typhoid fever, while a milder degree is often noted.

Richardson reports a series of 22 cases of typhoid treated with the filtrate of a bouillon culture of the typhoid bacillus and he reports that in this fluid is an agent of therapeutic value. The filtrate of a typhoid bouillon culture grown for six weeks at the body temperature has little, if any, toxic power, and two cc. injected intraperitoneally into guinea pigs produce a certain amount of immunity, not only in the guinea pig, but also (subcutaneously) in the human subject. Typhoid patients may react quite sharply to such injections, the reactions being characterized by a chill, rise in temperature and increased frequency of pulse and respiration; this reaction occurred at least once in one-half the cases thus treated. Experience thus far seems to show that the best results are to be obtained in cases not yet too severely damaged by the typhoid poison, while the best conditions for this treatment should be seen in cases of threatened relapse, and perhaps, in the beginning of the original disease when the natural immunity is still exhausted. Little good should be expected; indeed, harm might be done if an individual already hyperintoxicated were subjected to the effects of an exaggerated destruction of bacilli; in Richardson's series 22 cases there occurred 2 deaths, one from pulmonary embolism and one from hemorrhage, for which he does not hold the treatment responsible. The majority of the cases did not come under observation until the disease was well advanced, but 5 early cases were especially interesting as showing what seems to have been a shortening of the disease, the injections being begun on the seventh to the twelfth day, the temperature falling to normal on the twelfth to the twentieth day, or within from five to twelve days after beginning the injection.

Marchoux was sent to Senegal, in 1896, to make a special study of typhoid and paratyphoid; in a recent article, he states that he found typhoid fever, as it occurs in temperate climates, extremely rare in Senegal, and its place is taken by paratyphoid infections, which are usually mild. When typhoid fever is im-

ported it assumes frequently a severe form, thus in one epidemic from imported typhoid there were 35 deaths among 170 typhoid patients. The paratyphoid affections are very common in tropical countries, and probably include the pseudo typhoid fevers, the "continuous malarial" fevers and the "mountain typhoid" noted in Brazil. The success of copious irrigation of the intestines in all these affections seems to confirm their intestinal origin, and that the large rather than the small intestine is involved. He did not detect any connection between these affections and drinking water, but in one epidemic of typhoid the water-borne source of infection was clearly evident and demonstrated that prophylaxis of typhoid can be accomplished in the tropics as well as in temperate zones.

As to perforation in typhoid, parents, attendants or nurses who have charge of the patient should be instructed to notify the physician when any sudden, severe or unusual pain occurs in the abdomen. As Hays points out it is well to have a card with the symptoms of perforation on it; to be given the nurse or attendant. Emmerling instructed one mother to notify him in case any sudden pain occurred; Hays saw this patient in consultation exactly two hours after the onset of pain, and the diagnosis was made at that time, so it is feasible by following this plan to diagnose perforation early and to have prompt surgical intervention. Nothing is gained by waiting and even if no cause is found for the symptom, it is better to err on the safe side than to lose lives by waiting for more pronounced symptoms. The prognosis of perforation is always serious, more so than in other perforations, for this complication comes in typhoid fever at a time when the normal powers of resistance are weakened by two or three weeks of previous illness. Recovery depends on several factors, some of these being the physical condition of the patient before the advent of the fever; the character of the typhoid infection, whether it is mild or severe, and other previous complications; again the organisms found in abdominal fluid after perforation are important. The time of operation after the occurrence of the perforation is vital too. Patients have the symptoms of perforation and yet recover without operation, but their number is small, and no one can claim that more than 5 per cent. recover without operative interference. Recovery without operation can be subdivided as follows (Hays): First: those having abscess formation. Second: those without abscess formation. Recovery at times occurs in cases of the first division. The abscess cases are usually the result of ulceration and perforation of the appendix, as the appendix is a more fixed part of the bowel than any other in which perforations take place and so frequently cause of abscess formation. Of the second division, in which the patients simply recover, Hays believes that these are not cases of perforation and that the symptoms present are due to some other cause. When perforation occurs in any part of the intestine except in the appendix, they very rarely recover without operative interference, and while it is possible, it is not likely. The only treatment is operative. Prompt surgical intervention should be done early unless there is a great lowering of the temperature, when time should be given for the patient to react. When the operation is done within six hours after perforation occurs it is the belief of the good surgeon that a recovery of 50 per cent. will follow. The closing of the perforation is naturally the first thing to be done; there is usually some difficulty in this procedure because the bowel is friable on account of the great degree of inflammation. Hays first used a purse string suture, over which he introduced one or two tiers of continuous Lembert sutures, always of silk. The Lembert sutures should be introduced transversely to long axis of the bowel; in his last four cases, after closing the perforation, he used another procedure which has saved the lives of two, possibly of three, of the four patients. This procedure in dealing with the closed perforation of the intestine is original with me, although it has most likely been made use of by other surgeons. It consists in simply anchoring the bowel at the site of the perforation to the peritoneum at the upper angle of the incision through the walls of the abdomen. This should be done so that all the sutures introduced to close the perforation are extraperitoneal. This has great advantage over the old method of returning the bowel to the abdomen.

Stokes and Fulton state before recording their observations that a brief record of the work which has been previously performed by others in treating cases of typhoid fever with a curative serum is interesting. Chantemesse prepared by filtering the fluid cultures; this serum in doses of .01 of a cubic centimeter prolonged in lives of guinea pigs injected with varying doses of the soluble filtrate; this serum is antitoxic, since its injection renders animals more resistant toward the soluble poison. Chantemesse found that the general fatality from typhoid fever in the Paris hospitals was about 19 per cent. but in 186 cases which were treated with the serum the fatality was only 3 per cent. Naturally, he attributes this reduction to the use of the serum and the seven fatal cases had either peritonitis, hemorrhages or perforation. Tavel of Berne has also used an immune serum in the treatment of typhoid fever, prepared by incubating 1.5 liters of a bouillon typhoid culture for two weeks, and then adding 0.5 per cent. of carbolic acid, which kills the bacilli and releases the intracellular poisons. Two horses were injected with gradually increasing doses of this bouillon until 150 cc. could be taken. Later mixed dead cultures of four different races of typhoid bacilli were used, and at last living mixed cultures were injected. The serum was thus made polyvalent. Tavel reports 4 cases in which he used from 3 to six injections of his serum; in all of these cases the plateau stage of the fever was great lessened, and this was rapidly followed by the stage of decline. The pulse and respiration also fell with the temperature, and no unfavorable symptoms were noted. These 4 cases reached a normal temperature in 18, 20, 18, and 13 days respectively. He noted a fall of temperature often 24 hours after the injection of the serum, but combated a future rise of temperature by further injections.

Stokes and Fulton's series included 23 cases with 2 deaths; but autopsies were not obtained in either of the fatal cases. Case 1. The first was a boy of 14, who had been in the hospital 10 days when the injections were begun. He received 8 doses of 10 cc. each in 4 days. After the serum treatment began the boy developed a bullous dermatitis. The injections appeared to cause some decline in temperature, but in the middle of his third week in the hospital he developed otitis media followed by streptococcus septicemia, which proved fatal. The other fatal case was

seen in private practice. Case 2. Man, aged 44, overfat, a civil engineer. He was seen in the beginning of his attack, having a temperature of 100 degrees. Two days later his blood gave a distinct and prompt Widal reaction and on the following day serum treatment was begun; his urine was not examined before the first dose of serum was injected, but was found to contain albumin and casts immediately after. He received in 5 days 6 doses of serum, 90 cc. in all. After the third injection of serum the temperature began to drop and we were inclined to think that good results were to follow, but the temperature rose to 103 degrees on the thirteenth day in bed and the fifth day after the last injection. Intestinal hemorrhages appeared on the thirteenth day in bed. There were several copious losses on this day. Two days later hemorrhage reappeared, and on the night of the thirteenth day in bed he died. Among the twenty-one cases ending in recovery, there were fifteen in which Stokes and Fulton considered that the influence of the serum contributed to the favorable result. The cases in which no effect for good or evil was observed were six in number, and one of these is illustrated by a temperature chart. One of the distinctly favorable cases was that of a young married woman of twenty-three, who was six and a half months' pregnant. She aborted on the evening of the day when the first injection was given, but completed her defervescence in fourteen days. One of the cases admitted to Johns Hopkins on the fourth day in bed was defervescent in ten days after admission or on the fourteenth day in bed. No unfavorable effect on the kidneys or blood were reached by urinalysis or blood in any of the cases, while the average period from admission to defervescence was in thirteen favorable cases, 12.6 days. The laboratory experiments coincided with the clinical observations that the immune hog serum is not hemolytic for human blood. In one or two instances these investigators encountered discouragement from associated clinicians who feared injury to the kidneys or hemolysis from the use of such large amounts of serum. In one case they stopped the serum in deference to the suspicion that it caused collapse; the patient was a sailor who came to the hospital in an exceedingly feeble state, having had diarrhœa on ship board for two weeks, being exceedingly depressed after each bath. The use of serum was, however, resumed after an interval of days, though tubbing was not resumed. The case appeared to be one of those favorable to the use of the serum. They believe that by the use of the serum the febrile period may be shortened, and the daily variation may be favorably reduced.

Ecthyma requires for its treatment a wholesome, nutritious diet, with exercise, bathing and fresh air. Shoemaker (*Med. Bull.*, Nov. 1905) prescribes in addition, ℞ arseni trioxidi gr. i; ferri pyrophosphatis, et quininæ sulphatis, aa. gr. xxx. M. Ft. capsulæ No. xxx. Sig. One capsule four times a day. Locally: The crusts should be removed with oil, or water dressings, or poultices, and the parts cleaned with an antiseptic wash—either a one per cent. solution of phenol or a solution (1—1,000) of corrosive sublimate. A weak mercurial ointment, of ten grains of calomel to the ounce of benzoined lard is to be used subsequently as a dressing.

DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE KIDNEY.

BY GEO. R. REYNOLDS, M.D.

PART I.

THE diagnosis of the renal tuberculosis in its early stage is, as elsewhere, of vital importance; especially is this true now that surgical interference is possible.

The renal tubercles found in cases of general miliary tuberculosis have usually no clinical interest in this study, for the kidney is not one of the points where tubercular localization is most intense, and generally renal tubercles are but little advanced when death takes place from the disease in other organs. In this case, they present no symptoms which are perceptible among the much graver ones attending the progress of the disease elsewhere. In the disease known as tubercle of the kidney, caseous nephritis, or "nephro-phthisis," masses of caseous material are deposited in the renal parenchyma which may soften, break down, and communicate with each other and with the calices and pelvis. In some cases it is probable that the disease originates in or immediately underneath the mucuous membrane of the urinary passages. This process of breaking down continues much in the same way as that of a phthisical lung, until the kidney becomes little more than a hardened, irregular, knobby shell enclosing a ragged, ulcerated cavity, with thickened, pus-secreting walls and filled with pus, more or less blood, and débris of kidney structure and tubercle. In the remaining renal's substance it is not unusual to find miliary tubercle. If obstruction of the ureter exists, a pyonephrosis may exist in addition. This affection may include two processes, differing in pathology and etiology and to some extent in clinical history; true tubercle may originate in the kidney as a result of either tubercle or cheesy inflammation elsewhere, as in the lungs, bodies of the vertebræ, or scrofulous glands, no marked symptoms being noted until the process of softening and breaking down has reached the mucous membrane of the pelvis. Renal tuberculosis sometimes succeeds, as a more local invasion, to tubercle or cheesy inflammation of the urinary passages, and in this case the symptoms appear simply as aggravations of those depending upon ureteritis and pyelitis. Renal phthisis is seldom an independent disease, often associated, besides the affections already named as standing in etiological relationship with it, with cheesy inflammation of the testicle, vesiculæ seminales, and less frequently of the ovaries. The diagnosis of tubercle in the kidney before it has reached the pelvis is often impossible. Pain in the back or slight albuminuria, as has been already stated, is of no diagnostic value except as pointing to some renal irritation, as to the cause of which it tells nothing. In the presence of tubercle elsewhere it might be regarded as suspicious. After cavities have become connected with the pelvis or have extended from it, the symptoms become more marked. In the urine are to be found pus, some blood, epithelium of the urinary passages and often of the kidneys, in many cases in the form of casts; and it is claimed that masses of caseous matter as large perhaps as the head of a pin may be found, which will of course make the diagnosis almost a matter of certainty. If the urine containing such a deposit is acid, it is almost certain that the lesion is mainly in the kidney and that the bladder is but slightly if at all affected; the bacillus of tubercle has been

found. The presence of this bacilli will not only testify as to the presence of the clinical condition known as phthisis of the kidney, but will also make it sure that the affection depends upon tubercle in the strictest pathological sense, and will influence the prognosis accordingly. Inoculation of purulent sediment from the urine of a patient suffering from tuberculosis of the urinary passages has produced tubercle in the iris of the rabbit. This procedure has been suggested as a means of diagnosis as to the character of a chronic catarrh of these passages before the appearance of tubercle elsewhere. If pyelitis have already been present, the change in the appearance of the urine will be less characteristic, but there may be a marked aggravation of symptoms when the contents of softened masses are added to the secretions of the mucous fluctuation in the quantity of débris present from day to day. Urinary fever of the hectic or subcontinued type, with anorexia, nausea, dry tongue, and diarrhœa, is present. In some cases the enlarged and irregular kidney may be detected.

Tubercle may began in any part of the urinary tract primarily except the ureters, and one out of eighteen cases of tuberculosis begins in the genito-urinary organs. Camayo states that in most cases tuberculosis disease of the urinary system is primary in the kidney: and James Israel expresses his conviction that a primary disease of the kidney is very much more frequent than is supposed. Fenwick states that the kidney and ureter are primarily affected in ten per cent. of cases of urinary tuberculosis. But it is chiefly in numerous and valuable papers by Tuffier, and especially in a recent pamphlet, that we find the strongest evidence and most strenuous arguments, hardly admitting of denial, brought forward. Tuffier, without hesitation, affirms the existence of a primary renal tuberculosis. The classification given by him of the various forms of tuberculous disease is as follows: (1) Miliary tuberculosis, (a) nodular infiltration with or without cold abscess; (2) Tuberculous infiltration, (a) tuberculous pyelonephritis; (b) massive degeneration of the kidney; (c) tuberculous hydronephrosis. In both primary and secondary diseases, the condition of the ureter, due to the spread of the disease upwards or downwards, is, Tuffier insists, of chief importance, but frequently overlooked. When the ureter is permeable or enlarged—an infrequent condition—the kidney enlarges little, if at all. When narrowed, there results a pyelonephritis with distension, or a pyonephrosis with intermittent emptying; if obliterated, there develops either a massive degeneration of the kidney or a tuberculous hydronephrosis. Diagnosis is often difficult, but great advance has been made since Simon, Pawlik, Nitze, Casper, and Kelly have perfected the methods of ureteral catheterization. An S-shaped arrangement of tubercle bacilli has been asserted by Frisch to be peculiar to kidney disease, and other observers believe this sign is of importance. In doubtful cases it has been suggested that an exposure of the kidney and the removal of a fragment of it for subsequent microscopical examination, might be a valuable aid in arriving at a certain diagnosis.

The urine may be a very diagnostic sign, and a careful examination of the secretion should always precede the introduction of any instrument, as emphasized by Neuman.

It is well to remember that polyuria is one of the earliest signs in renal tubercle, resulting, no doubt, from the hyperæmia due to the irritating properties of the bacilli. It is more likely to be noticed when albumin is present; but this albuminuria is contingent upon the discharge of inflammatory material in the urine, appearing when the tuberculous lesion communicates with the urinary tract, but is wanting in the case of a tuberculous nodule buried in the renal parenchyma. Hæmaturia is usually slight, but hæmorrhage may occur, and may even be profuse, long before other signs of tubercle appear. These premonitory attacks of hæmaturia may be extremely baffling, and it is only by repeated and careful examinations of the urine that their true significance may be determined. In these early attacks the urine contains no tuberculous débris recognizable by the naked eye or microscope, and the characteristic bacilli may only be revealed by cultivation or inoculation, but as the disease progresses, the characteristics of the urine become more pronounced, the albumin increasing in amount, the reaction tends to become alkaline, the urine is opaque and cloudy from suspended pus and mucous, and a varying deposit of granular tuberculosis débris. Profuse hæmaturia is rarely seen in renal tuberculosis. At a later stage the urine becomes increasingly offensive and the deposit more marked. In the prognosis remember that a focus of tubercle limited to one organ or a part of it is more favorable. Cure of small discrete nodules, which become replaced by fibrous patches, may occur. In other cases larger tuberculous masses have become encapsuled and dried up, leaving putty-like masses. These remain quiescent so long as they are undisturbed, but an injury will set up trouble again. The cases most suited for operation are those where the disease is limited to the kidney, being cases of primary tuberculosis of the kidney which has not yet extended to other parts of the urinary system. These are the cases in which diagnosis is of necessity most difficult, but they are the only cases in which operative measures are likely to be of any lasting benefit, and as Newman aptly says: "The medical attendant who makes an early diagnosis in a case of renal tuberculosis, renders a service to his patient as valuable as that of the surgeon, who at a later date, performs a successful nephrotomy or nephrectomy."

Kronlein operated in 51 cases of tuberculosis of the kidneys, which is about a third of all his surgical work on the kidneys, nephrectomy in 34, and the results have convinced him that this is the operation to be preferred in such cases. The affection is much more common in women than in men. In 92 per cent. it was restricted to one kidney, the infection being always by way of the blood, never urogenic. The tuberculosis was solitary in the kidney in only 12 of his 34 cases; in the others the kidney affection was associated with a tuberculous process in the lungs in 9, in the bladder in 12, in a joint in 9, and in 4 the entire urogenital apparatus was invaded. Twenty-four of his 34 nephrectomized patients are still living. Eight died within eight months of the intervention. Nine died with indications of insufficiency of the remaining kidney. Nine of the 10 subjects who died were examined post mortem, and nothing abnormal could be detected in the remaining kidney. He is getting up an atlas on renal tuberculosis, and has collected a quantity of valuable material. He distinguishes between the fluid and the solid form, the latter including the solid caseous and the diffuse varieties. The list concludes with the embolic form, of

which he describes a typical example. The methods of functional diagnosis now in vogue can none of them be implicitly relied on. He regards extirpation of a tuberculous kidney as one of the most successful of all operations.

Fenwick believes that an early diagnosis of renal tubercle can be made by examination of the ureteric mouths by the cystoscope.

Nephrotomy is the operation which, so far, has been most extensively done. It consists in incision of the kidney and drainage to give exit to the accumulated pus and débris, and for a time some benefit follows. Unfortunately the operation does not provide for the arrest of the downward progress of the disease along the ureter; and further, the continued presence of a freely discharging sinus in the loin is a source of pain and inconvenience, if not of grave danger to the patient. According to Guyon, no patient survived the operation of nephrotomy for renal tuberculosis longer than two years. At the most, therefore, nephrotomy must be looked upon as a palliative operation, and should be limited to those cases in which the disease is progressing rapidly; a prolonged and severe operation is impossible. Other indications for nephrotomy consist in the presence of perinephritic abscesses, or a doubtful stress resistance of the opposite kidney; in the majority of instances it is to be regarded as a means of diminishing the fever and improving the general health of the patient before proceeding to the radical operation of nephrectomy. Nephrectomy is the best method of treatment, and is attended with some prospect of ultimate success in proper cases; before proceeding to remove the kidney, it is necessary to ascertain that the disease has not yet invaded the bladder; and further, reliable information must be obtained of the health of the kidney which is to perform the entire urinary functions. Fenwick has shown that the cystoscope here proves of great value in excluding disease of the bladder, in localizing the renal disease, and in giving some idea as to the secretion of the other kidney, but for exact information regarding the latter use the ureteral catheter.

These methods of examination may fail, however, then the suggestion to cut down and examine each kidney from the loin as a preliminary step to a future nephrectomy is a good one, although it is evident that only a few of the patients under consideration will be in a condition to allow of such thorough exploratory measures. Nephrectomy secondary to nephrotomy is more difficult than primary nephrectomy, but very often the condition of the patient leaves the surgeon no choice in the matter. Subcapsular nephrectomy is often found suitable for these secondary cases. Removal of a portion, or sometimes the whole ureter, along with the kidney, is, in most cases necessary, for a troublesome sinus may remain, and, as Johnstone has remarked, the discharge of tubercle bacilli may continue. If the extended operation threatens to overtax the patient's powers of resistance, the ureterectomy may be deferred to some subsequent date. Partial nephrectomy is probably not well suited to tubercular disease of the kidney.

Contract lodge work has been refused by every physician in Trenton, N. J., an agreement having been unanimously signed to this effect.

First aid to the injured eye is the subject of an excellent paper by M. F. Coomes (*Internat. Jour. Surg.*, Dec., '05), who writes from the standpoint of a railway surgeon, having both the welfare of the patient and of the company at heart. The latter consideration does not here concern us, who are here interested only in the therapeusis. If the general practitioner feels himself incompetent he should not hesitate to refer the case to the specialist; and if this advice were ever pertinent, it is certainly so with regard to so delicate an organism as the eye. Everything which enters the affected organ should be sterilized. Many eyes are lost from a simple corneal infection, or infections through other wounds about the eye. Much better were it to suffer pain and inconvenience for a brief time with a foreign body in cornea or beneath the lid, than to have unsterilized substances introduced. Railway surgeons and those who treat many accidents should have always at hand some few articles necessary in the event of an eye injury. These may be contained in a small package with very simple directions. Dr. Coomes presents such a package, in which are: A ℥ii bottle containing gr. x. acid boric; a ℥ss bottle containing gr. x. cocaine; and a ℥i bottle containing gr. v. atropia sulph. By filling these bottles with sterile water one has at hand, a 1 per cent. solut. boracic acid, a 4 per cent. solut. of cocaine; and a 1 per cent. solut. of atropine. Little cotton mops (upon pine sticks), a gauze bandage, 2 in. by 10 yards; three droppers; a small roll of oxide of zinc plaster, ½ in. wide, are all included in this package. A man, let us say, has incurred a rent in the cornea, the iris being engaged between the lips of the wound. Cocaine is to be instilled every five minutes for three doses. The inexperienced practitioner who does not feel competent to clip off the protruding iris will then instil the atropin, place a firm bandage over the eye, and send the patient to an expert. The management of burns about the eye requires great care. Molten lead may have been blown within the lids; as a result the conjunctiva is seriously damaged, so that symblepharon (adhesion of the burnt surface) is to be feared. Here one must use freely carbolized oil (5 drops of the acid to an ounce), or sterile olive, or sterile albolene oil, five drops several times a day. Extensive burns require thorough stretching the lids at night and morning by means of retractors. Or in adults, casts made of sheet paraffin, such as is used by dentists, may be fitted over the eyeball. A hole must be made in the centre of such a cast to prevent irritation of the cornea. This shield can be worn several days (months, if necessary), nor does it have to be removed to cleanse the eyeball. It can be slightly lifted from the orbit, which can then be thoroughly washed and medicated.

A floating hospital for Egypt has been established by the Presbyterian Church, in its extension of missionary work in Northern Africa. Thus will medical aid be given to natives along the shores of the river who suffer from pulmonary and eye diseases. This boat is to be equipped with all modern appliances for the treatment of trachoma and other eye diseases, and will make two monthly trips from the mouth to the source of the Sohat, a tributary of the Nile. The boat is named in memory of James A. Elliott, founder of the North Church, states the *Philadelphia Public Ledger*.

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Life is a train of moods like a string of beads, and as we pass through them they prove to be many-colored lenses which paint the world their own hue, and each shows only what lies in its focus.—EMERSON.

THE THERAPEUTIC PROBLEM.

IT is not difficult to see why the subject of therapeutics has not kept pace with other branches of medicine, if one will but analyze the methods by which the effects of most drugs are studied and the manner in which they are applied in practice. We do not hesitate to say that the limitations which govern the administration of drugs is not grasped and in the great majority of instances they are unscientifically used in the treatment of the sick. They are employed too generally upon a partial or incomplete diagnosis, a condition which would be inexcusable in any other domain of medicine. The careful pathologist makes the fullest investigation and does not ignore a single symptom in individualizing his diagnosis, while the therapeutist is prone to generalize it and fail in the selection of a suitable remedy. With some exceptions the first duty of the physician is to reach a diagnosis, and not until this has been done should he prescribe any medicine whatever. Having made a careful diagnosis of the disease, he should make just as careful search for the remedy.

One of the reasons why therapeutics has languished is because of the lack of definite characteristic data upon which to base our action. It is neither scientific nor correct in principle to prescribe drugs for the names of diseases; they must be selected for individual patients. Quinine fails in some cases of intermittent fever, mercury and potassium iodide are not sufficient in all cases of syphilis, and so it is along the whole line of nomenclature, so that we may truthfully assert that there are no specifics for diseases; they only exist for conditions.

Hare, in his excellent text-book, has treated the subject as if the student were not a skilled physician or experimental pharmacologist, and he has given a chapter on applied therapeutics for the purpose of showing how and why remedies are given, and this is just what is demanded to rid us of that empiricism which is the root of therapeutic evil. It is not sufficient to know remedies and doses by heart, with little idea as to what they are to do. A knowledge of when a remedy is indicated is one of the most important facts of therapeutics. As Hare truly says, a physician may know that ammonium chloride is a remedy in bronchitis, but he must know the exact stage at which it is to be employed, or that digitalis does good in cases of cardiac disease, but fails to recognize the fact that it is only when compensation is lacking that the drug is needed.

The veteran therapeutist, Prof. Horatio C. Wood, in his introduction to a "System of Therapeutics," considers "first, the different principles which underlie the modern methods of therapeutics, including a discussion of the way in which physicians have discovered the facts upon which these principles are based; second, dosage; that is, the question of the amount of the remedies to be given, including the *relative effects upon the human system of the same medicine in different doses,* and the influence of idiosyncrasies or personal peculiarities, as well as of age, of sex, of habits of life, and other similar agencies, upon the action of medicine in various diseases; third, rules for the combination of drugs which should govern the physician in combining medicines into prescriptions."

The relative effects of drugs in different doses is one of the most important practical studies the therapeutist can make. He ought also to bear in mind that drugs are equal to harm as well as good. It is to be regretted that no work, so far as we know, differentiates the effects of varying dosage. The more modern works come very near doing so, but do not quite reach the point. It is fair, we think, to hope or even presume that before long this will be accomplished. Hare points out in some instances where large doses should be employed as well as where smaller ones will be better. This is a great improvement over the older literature of the subject. He also says that the dose must be varied to fit the case in the same manner that the cut of a coat must be varied to fit each individual. No doubt we should all agree that a smaller dose is safer during the period of reconnaissance to ascertain susceptibility, than a larger one.

Again, Hare says before ordering a drug or method of treatment the physician should have a clear conception of what he is trying to accomplish. No remedy should be given unless there is a distinct indication for its use. The old-fashioned "shotgun prescription should be supplanted by the small-calibre rifle-

ball sent with directness at the condition to be relieved. Having decided upon the remedy indicated, the physician must next determine the dose required. This latter decision is almost as important as the first, for very often an error in dosage will cause failure of the remedy. A large part of the therapeutic skill of the physician consists in fitting the dose to the needs of his patient.

Those who deride medical therapeutics as useless have either never tried them or have used them incorrectly. The therapeutist is able to treat successfully many diseases of which the pathologist is ignorant, and is obliged to base some of his treatment on empiricism for lack of knowledge of how his drugs act if the pathologist cannot advise him in what the disease consists.

Reynolds, in his classical text-book on Practice, emphasizes the importance of combining the objective and the subjective phenomena of disease in making a diagnosis of disease, and we want to urge upon our readers the necessity of using the same combination in the still greater task of selecting a remedy that will fully meet the conditions of the individual as found in practice. The tendnecy of all prescribers of drugs is toward polypharmacy, the natural resort of the inexcusably ignorant and routine practitioner.

Hare is right in saying that he who does not believe in the proper use of remedies for the cure of disease lacks the very keystone of the arch upon which all medical investigation rests, for the ultimate aim and object of all medical thought and effort are the cure or alleviation of disease. Like every other thing requiring a thorough knowledge of its component parts, methods of treatment are often much abused by the careless and ignorant, but are a power for good in the hand of the properly educated physician.

INVESTIGATION OF FOOTBALL.

DR. EDWARD B. NICHOLS and Dr. Homer B. Smith, the attending surgeons of the Harvard football team during the past season, have submitted a report *(The Boston Medical and Surgical Journal,* January 4th, 1906), which will certainly startle many minds. We set forth, to begin with, succinct observations which these experienced and conscientious physicians have made: The number, severity and permanence of the injuries which are received in playing football are very much greater than is generally credited or believed. The greater number of injuries come in the "pile" and not in the open plays. The number of injuries is inherent in the game itself, and is not due especially to close competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same. A large percentage of the injuries are unavoidable; and this percentage is greater in football than in any other of the major sports; it is much too great for any mere sport. The game does not develop the best physical type of men, because too great prominence is given to weight without corresponding nervous energy. Constant medical supervision where large numbers of men are engaged is a necessity and not a luxury, although it is questionable if a game, requiring the constant attendance of two trained surgeons, is played under desirable conditions. Leaving out all other objections to the game, ethical and practical, the conditions under which the game is played should be so modified as to diminish to a very great degree the number of injuries.

There were 145 major injuries noted by the surgeons among the players, of whom only 70 took part in the season's games; nearly every one of the regular players received two injuries requiring prompt surgical attendance. Besides these there must have been very many minor mishaps which were not brought to the surgeon's attention. Every player, no matter how skilled he is, is sure in the long run to be injured. There were nineteen serious brain concussions noted in a season of seven or eight weeks; all resulted in serious loss of memory, and made possible cerebral hemorrhage, such as did actually occur in the case of the captain of the team, who must as a result "revise his whole plan of life and indefinitely remain under careful medical supervision."

This report, as we have noted, is the production of scientific men, who are not moved by hysteria or undue emotionalism. One of them was in his day a noted college athlete. They quite completely confound those who make comment concerning the present movement to reform the game; the sarcastic observations of the latter that the most strenuous of college games should now be backgammon or croquet, are now shown to be quite without point. The situation is obviously a serious one, in which trifling is quite out of place. Our universities have, in our opinion, been of late much belied; the criterion upon which they have been judged, has been more that of mere brawn than of brain and intellect. And we submit that the test of "seats of learning" should be the latter and not the former of these qualifications. We invite the reader to an examination of the recent columns of *Collier's Weekly*, in which it has been shown that uneducated hoodlums (the phrase will not be found exaggerated) have been meretriciously drafted into the student ranks of an institution, in order that a brutal victory over its rivals may be gained. It is pitiful indeed to see this mean and sordid spirit of our times permeate the life and character of a young men's college.

We submit that England does much better than

we in this regard. In its universities and schools the game is played for the pure love of it, and victory is not sought at any price, no matter how dishonest, as is too often the case with us. The English game is open; there are no mass plays, no "bunches," no "piles"; there is no slugging, no Hooliganism. Over there they play a straight, honest, gentleman's game, less than which no college man should descend to.

THE REAPPOINTMENT OF DR. DARLINGTON.

THE reappointment of Health Commissioner Darlington for a further term of four years must certainly gratify every physician who desires to see the physical welfare of the community vouchsafed. We extend to him our hearty felicitations. He has demonstrated during his commissionership of the two years just passed a singular ability and earnestness in grappling with the tremendously important matters which all within the province of the Health Department of New York City. The greatness of this work is hardly appreciated until mayhap some fault in detail, some slight lapse in vigilance may excite the citizen to hot and generally unreasonable indignation. And the business of the Health Department is, we say, tremendously important. For if one will but stop to consider, there is absolutely nothing in life, either communal or individual, so important as health; nor anything so bitterly to be deplored, when it is gone past remedy.

In a municipality as huge as is the metropolis, so labyrinthine are the relations which the Health Department bears to the whole machinery of government, so complicated are the duties that fall to it, so great are the difficulties attending the execution of wholesome measures that a very unusual stamina and circumspection are requisite. Such qualities as these Dr. Darlington has certainly displayed. He is comparatively a young man, as important public office goes; and the commissionership has been his first official position. He has, however, during the last two years acquired a firmness of grasp which assures from him the continuance of a very memorable service, and one worthy the just applause and the gratitude of the electorate.

Among the recent achievements of the Department are the following: A very careful examination of the physiques of school children has been instituted whereby there has been brought to light a truly amazing condition of functional and anatomical abberation from the normal in the very young. Trachoma and other ophthalmic contagions now undergo treatment in the Department hospital and clinic. Serums are now provided, not only for diphtheria, but also for other infections such as tetanus, wherein either cure or immunity may be secured by this means. A commission of eminent scientists has, under the auspices of the Department, rendered exhaustive and scientifically important reports with regard to the diseases pneumonia and meningitis. The tuberculous poor may receive treatment in the Department clinic; and more than this (so far as the communal health is concerned) education, so that the family and environment of the consumptives may be measurably safeguarded against the spread of this disease; the Department's hospital receives advanced cases, who thus do not infect their fellows; a large tract of land has been secured up-state where many of the city's poor who have incipient tuberculosis may be restored to health and to become again useful citizens; the Department has co-operated with many non-governmental bodies, notably with the Charity Organization Society and the National Association for the Study and Prevention of Tuberculosis, in the recent Tuberculosis Exhibition in New York City.

It is most gratifying to note that Mayor McClellan, in beginning his second term of office, has made such appointments for the various municipal departments as will insure to this city, which has been in the past so sadly a prey to conscienceless political activity, a very great measure of good government. We find particularly that the Police, Street Cleaning and Tenement House departments are to be chieftained by able, courageous and honorable men. It is with these men that the Health Commissioner must co-operate if his Department is to yield its righteous measure of fruition; nor can any one who has reviewed Dr. Darlington's earlier work assign to him a lesser place among these four Commissioners. We may even hope, and confidently, too, that the crying curse and the world-wide shame among American institutions, its misgoverned municipalities, will, during the next four years, find its refutation in the government of New York City, the most difficult of all American cities to govern well.

THE ROENTGEN RAY IN THE DIAGNOSIS OF DISEASES OF THE LUNGS.

IN a recent paper by Pfahler on this subject, published in the *Journal of the American Medical Association*, this authority makes the statement that the lesions of tuberculosis can be recognized earlier and more accurately than by any other method, while it is the most valuable and the most acurate method of recording the lesions at various stages of the disease. This is a broad statement and one not yet fully accepted by the profession at large, yet it is becoming patent that no chest examination is complete without an X-ray examination.

There are many difficulties, however, both in tech-

nique and interpretation. The latter task is generally far more difficult than the first. The negative and not a print should be used for purposes of study. In the first place fluroscopic examinations of the lungs have been largely discarded because of their inaccuracy and dangers. To photograph the lungs, they must be at rest; the patient must hold his breath, which usually can be done from three to fifteen seconds; yet Pfahler reports several good negatives in the case of children taken in one-tenth of a second. This is surely a great advance in X-ray therapeutics.

It is well to have a thorough physical examination made of the patient before the Roentgen examination, for it may modify the method used or make a second examination forcibly unnecessary. Of course old calcified tubercles furnish the most decided shadows and lesions of this sort can be diagnosed as small as one-eighth of an inch. Fibrous scars cast less dense shadows and hence such small lesions cannot be determined. Consolidations vary in the density of their shadows with the size of the lesion, but an area of one-half inch in diameter can be detected in a thin patient. Of course all points of consolidation at varying planes are thrown on the photographic plate on one plane; hence one might conclude that more of an area was involved than was actually the case. It requires an experienced observed to detect this variation, for if the whole lobe or lung is involved, the density will be much greater than in scattered areas.

Cavities are recognized by their increase in transparency surrounded by the shadow of consolidation. If the cavity is small or resting on a large area of consolidation or thickened flema, it is less easily recognized. A cavity of one-half inch in diameter ought ordinarily to be detected.

In pneumonia, in pulmonary gangrene and abscess the Roentgen ray is serviceable especially in lesions not centrally located as beneath the scapula. In pneumothorax, pleural effusion, emphysema and collapse of the lung the ray is of service. Even in such obscure cases as subphemic abscess, this condition has been noted by the X-ray.

It is pleasing to note that workers in this field are using more and more the term "Roentgen ray" instead of the somewhat uncertain one, "X-ray." It was a wonderful discovery, and it is proper that its discoverer should be honored and remembered in this way. Let all workers and writers in this field make it a practice to select this term and it will easily become attached permanently.

Flat Life in Paris, declares *Harper's Weekly,* must be very different from what it is in New York, if President Loubet is so eager to give up the Elysée for it.

THE AVERAGE LENGTH OF PRACTICE OF THE AMERICAN PHYSICIAN.

THERE were formerly three classes of lies, of which the extreme was "statistics"; nowadays we are getting more respect for such data or collecting it more carefully. The necrology department of the *Journal of the American Medical Association* is probable as complete as any such department covering such a vast area can be made. In it were recorded 2,045 deaths of physicians in the United States and Canada in 1905. There is an estimated medical population of 215,000, hence the rate of mortality is 16.36, not differing much from previous years; 14.74 in 1902; 13.73 in 1903, and 17.14 in 1904. It is astonishing that death, so unexpected in the individual, is so regular and constant in the mass.

The youngest doctor reported was 23; probably there were younger men who died, but being so new in their profession their deaths were not forwarded. The oldest was 104, a fairly ripe age for a nerve-racking profession. In practice the time varied from nothing to seventy-five years, probably the record of the 104-year-old doctor; it is well he did not hear the views of Osler or he might have lost thirty or forty years of usefulness. There were five others who practiced over seventy years. The average length of practice is thirty-one years and one month, quite a remarkable length considering the fact that so many physicians are exposed to death, disease, exposure, and exhaustion constantly.

The military records show that of this number 184 served their country for the North and 70 for the South in the Civil War, while 11 were Mexican War veterans. Two had served in Indian wars, 10 in foreign wars and 12 in the Spanish-American War. Many were prominent in civil life, as congressmen, mayors, postmasters, coroners, state senators, consuls, and even as judges.

The nerve racking character of medical practice is seen in the list of causes of death, for heart disease in various phases leads all other causes with 202 cases. Cerebral hemorrhage is second with 153 deaths; pneumonia, 141; tubeculosis, 102; nephritis, 100; senile debility, 80; accidents, 72; suicides, 46; typhoid fever, 41; malignant disease, 34; septicemia, 28; appendicitis, 27; and so on down the list.

It is interesting to note the methods of suicide, for it is to be naturally supposed that the physician if he chose his manner of death would get the best and easiest method possible. Twenty-six of these killed themselves with revolver or gun, seven by morphine, four by carbolic acid, four by bleeding and three by strangulation, showing that no especial difference exists when the thought of self-murder occurs. Probably the individual is in such a depressed mental state

that no attempt is made to die in the easiest manner possible.

The introduction of new men into the profession is still greater than the outgo to a considerable proportion. There is no sign of any dearth in the supply of medical men.

CASE HISTORIES.

AN idea is a precious thing, and the *Medical Standard* presents one in its observation concerning a noted diagnostician "whose working library almost entirely consists of reprints and clippings containing accounts of actual clinical cases and who pays very little attention to ordinary text-books." The foundation of diagnosis, declared this wise physician, is objective induction, to which end the actual clinical experience of the thousands of men who are in daily living contact with disease in the persons of their patients is the most valuable and the most trustworthy part of medical literature.

For ourselves, we feel some dereliction in this regard. Case histories are dry, as Dr. O. W. Holmes said of bones, when he began his annual course of lectures on anatomy; and we are under the journalistic necessity to set forth an author's views in as comprehensive a manner as possible. The general practitioner, however, is not under this obligation; and to him the idea evolved by our esteemed contemporary should appeal strongly. Richardson, in his address on *The Responsibilities of Surgery* (*Jour. A. M. A.*, Oct. 7, '05), has emphasized this idea with regard to his experience as a teacher. One is almost able to say, he declares, "this student will make a successful diagnostician, and his advice will always be good; that student will never amount to much as a diagnostician." In one of his examinations at the Harvard Medical School he asked his advanced students to give the diagnosis, the prognosis and the treatment in eight carefully described cases, taken from his note-books. In some of these cases there had been a great difference of opinion among physicians of the largest experience; yet some of the students, interpreting the histories properly, and drawing the correct conclusions, gave invariably the right answers. Many of these students did not show the learning of others who generally drew wrong conclusions. "The student whose deductions were in every case correct will without question make more successful practitioners than the students who, though exhibiting much more learning, picked out the unimportant features in the histories of the cases, and on these unimportant features based correct deductions, which were, as to the real lesion, always wrong." Richardson emphasizes as requirements of the successful diagnostician "the power of grasping the essential features of a case, and of basing on such evidence conclusions almost invariably correct."

It is said, in part explanation of the successful career of a very great physician, that "he buried himself for ten years in the morgue." This observation needs explanation, of course. The meaning is that this scientific man spent most of these years in studying cases. A hospital patient, on entrance, had his family and life history most carefully recorded; then followed the history of his disease before entrance; and then an exhaustive case record while in hospital. When death occurred an autopsy was always most eagerly sought, and, when granted, carefully conducted. The diagnosis made in hospital was then substantiated; and if it was not, the reasons why were discovered and added to the store of experience, which day by day became richer for this wise student of disease.

We had the good fortune at one time to do some work in the pathological laboratory of a great hospital. Before an autopsy was made each assistant studied the case history as it was brought down from the ward, and each man gave his opinion and his diagnosis before the body was opened. Sometimes the conclusions were correct, sometimes they were startlingly otherwise.

THE PANAMA CANAL.

WE have here a theme upon which the imagination should delight to dwell. A glance at the map of the Western Hemisphere suffices to indicate how advantageous to the happiness and well-being not only of the Americas, but also of the whole world, would be a waterway adequately large through the Panamanian Isthmus. A vessel which would now reach the coast of our Western States with its cargo untouched must perforce sail or steam thousands of unnecessary miles, and this has been the case since the beginning of our American civilization. Our great Clark, than whom we have had no more splendid nor glorious captain, and our good battle-ship *Oregon,* would not, if there had been an Isthmian Canal, have had to make their epic voyage around the Horn; nor would our sailors and stokers, in their heroic eagerness to reach the Cuban seas before the expected fight with the Spanish ships, have had to forego even drinking-water in order that steam might not be lacking. And not only the Western World, but all civilization for centuries past, has needed this canal; for European commerce, seeking to reach the Pacific markets, both our own and in the Orient, would thus find a direct passage for its ships, without having to make a wide and occasionless detour. Balboa and Charles the Fifth grasped this situation, although they had not before them the maps which we now can see, and knew not of the two vast continents which are separated by this narrow strip of land; and discerning men (the greatest among whom was De Lesseps) have since recognized the over-

whelming importance of this enterprise, of making a ship canal sufficiently wide and deep for all vessels of whatever tonnage to pass each other.

During the last fifty years or so this beneficent project has failed of fulfilment, in large measure through the punative and selfish opposition of railway interests and the power these latter have had with unscrupulous politicians.

It would seem now that, after many years of agitation, of useless palaver, of back and fill diplomacy, of stupid and ineffective planning, a canal is fairly likely of construction; and no doubt it will eventually be constructed despite some very pitiful conditions which evidently now obtains in "The Canal Zone." The medical reader will no doubt recall the strictures of Dr. Reed. Mr. Poultney Bigelow's recent article in *The Independent* has been much discussed. We are glad that the President has requested a Congressional investigation, and that an investigation is in progress. Undoubtedly much that is reprehensible exists to-day in relation to the building of the canal. We have no disposition to take part in the discussion of these matters, save to note that throughout history enterprises of like nature (from which politics cannot possibly be divorced) have invariably been attended by grave scandals. Nor need we confine ourselves to American history in this regard. The history of the Crimean war, for instance, is saturated with simply hellish examples of govermental incompetence and corruption. The main thing, and the only thing that will be remembered by a grateful posterity, is the accomplishment of this colossal enterprise. Perhaps the greatest clog upon progress here is the lack of sufficient appropriations. Thus far only a parsimonious sum of ten millions has been voted, and this by a billion-dollar Congress—a Congress which expends every year a thousand millions upon—what? Let the reflecting citizen answer to his shame! This mighty project should not be frustrated by petty considerations.

Three Surgeon-Generals in Uncle Sam's service have been differentiated by Dr. O'Reilly, who holds one of these positions. The title of surgeon-general of the army was bestowed on the head of the Medical Department of the army in 1818. Dr. O'Reilly now holds this title, and considers he has the right to retain it, as his corps has had it so much longer than the others. In 1871, the chief of the Bureau of Surgery and Medicine of the navy was made surgeon-general of the navy. In 1902, the supervising surgeon-general of the Marine Hospital Service was made the surgeon-general of this service. We agree with Dr. (or is it General?) O'Reilly that this sameness of title has led to much confusion which might become really serious in time of war. (*Nota bene:* We should have thought that the proper plural with which this item is headed should be surgeons-general; but prefer not to be at variance with so high an authority as our esteemed lay namesake, the *New York Times,* to whom we are indebted for these facts.)

BIBLIOGRAPHICAL

A Text-Book of the Diseases of the Ear, Nose and Pharynx.—By D. B. St. John Roosa, M.D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post Graduate Medical School and Hospital; Consulting Surgeon to the Brooklyn Eye and Ear Hospital; formerly President of the New York Academy of Medcine, etc., and Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Post Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine, etc. New York: The MacMillan Company, 1905. Octavo; pp. 621. Price, $3.00.

This text-book may be placed at the very head of the list by the practitioner and the student who wishes to study and treat diseases of the ear. We are glad to see that proper stress has been laid upon the simpler affections, which may usher in the graver ones, and we are told how to treat acute affections in the early stages, so as to avoid an operation when possible. The subjects are practically woven together, to represent the clinical picture as it is found in every-day work. Its authors are men of high standing in their specialties and their work, based upon a large experience, must command the attention of the profession. We cannot commend the book too highly.

The Dissociation of a Personality.—A biographical study in abnormal psychology. By Morton Prince, M.D., Professor of Diseases of the Nervous System, Tufts College Medical School; Physician for Diseases of the Nervous System, Boston City Hospital. Octavo; pp. 569. New York: Longmans, Green & Co., 1906.

This volume is a study of disintegrated personality as exemplified by a remarkable case. In this study the author has traced the development of the different personalities which originated through the disintegration of the normal self, and shows their psychological relations to one another and to the normal self. A detailed account of the daily life of the personalities is given after the manner of a biography in order to show their behavior to the environment and the way in which a disintegrated personality can adapt itself to the circumstances of life, and how it fails to do so. These phenomena have been briefly discussed in this volume as an introduction to a deeper study. Abnormal psychology is fast becoming an important field of research in the scientific world, and this treatise will prove an important contribution to the literature. Those who are interested in the subject should not fail to read this interesting and instructive account of a rare case.

Man and His Poisons.—A practical exposition of the causes, symptoms and treatment of self-poisoning. By Albert Abrams, A.M., M.D., Consulting Physician Denver National Hospital for Consumptives, the Mount Zion and the French Hospitals, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College, San Francisco. Illustrated. 12mo; pp. 268. Price, $1.50. New York: E. B. Treat & Co., 1906.

The subject of intestinal self-poisoning is now sufficiently known to furnish data for a most interesting volume, and for its successful treatment. It is now generally admitted that the human body is a receptacle and laboratory of poisons of a most dangerous character, and which may be manifested in a great variety of dis-

eases, the symptoms of which are mainly objective. The author presents in clear terms and in concise form the fundamental principles of the subject. Special attention is directed to the action of the Sinusoidal Current, and to the principles of psychotherapy. Our readers cannot fail to be interested in the book, and it will be found useful.

Blakiston's Quiz Compends.—A compend of medical chemistry, inorganic and organic, including Urinary Analysis. By Henry Leffmann, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, etc. Fifth edition. Revised. Philadelphia: P. Blakiston's Son & Co., 1905. 200 pp.; 12mo.

There never was any doubt in our mind but that there is a place for such books as this; they are the A B Cs of the student, and a great help. We cannot agree with the statement that "Chemistry is chemistry without reference to the applications," and the author is right in adapting his science to the special use of the medical student. It is excellently done, and just what is needed.

Saunders' Question Compends.—Essentials of Materia Medica, Therapeutics, and Prescription Writing. By Henry Morris, M.D., College of Physicians, Philadelphia. Seventh Edition. Thoroughly Revised. By W. A. Bastedo, Ph.G., M.D., Instructor in Materia Medica and Pharmacology at the Columbia University (College of Physicians and Surgeons), New York City. 12mo; pp. 300. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth, $1.00, net.

The student cannot find a better or more practical work on its subject than this little " essentials " from the press of W. B. Saunders & Co. Dr. Bastedo, in revising the book for this seventh edition, has brought it in accord with the new (1905) Pharmacopeia, introducing all the new remedies and carefully indicating their therapeutic doses and uses. For a work of three hundred pages it contains a mine of information so presented as to be easily grasped. There is no doubt as to its value.

Gall-stones and Their Surgical Treatment.—By B. G. A. Moynihan, M.S. (London), F.R.C.S., Senior Assistant Surgeon to Leeds General Infirmary, Leeds, England. Second edition, revised and enlarged. Octavo of 458 pages, beautifully illustrated. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth, $5.00, net; half morocco, $6.00, net.

The first edition of this work was completely exhausted in eight months. The author, by his masterly presentation of operative technic and clear, logical discussion of indications and contraindications, has won an enviable place in contemporary abdominal surgery. In this edition, increased in size by some seventy pages, many additional case records have been incorporated and a number of new illustrations added. We note also the addition of a very valuable chapter—Congenital Abnormalities of the Gall-Bladder and Bile-Ducts. It is evident that the whole text has undergone a careful revision and all recent work along the line of gall-stone surgery included. Mr. Moynihan's book still holds first place in its field. The illustrations are very beautiful, especially the nine colored plates.

Differential Diagnosis and Treatment of Disease.—A Text-Book for Practitioners and Advanced Students. By August Caillé, M.D., Fellow of the New York Academy of Medicine; Member and ex-President of the American Pediatric Society; Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; Visiting Physician to the New York Post-Graduate and German Hospitals; Consulting Physician to Isabella Home and Hospital, etc. With 228 illustrations in the text. Octavo; pp. 867. Cloth, $6.00, net. New York: D. Appleton & Co., 1906.

This book is written for the specific purpose of assisting the general practitioner in the management of his cases, and aiding the advanced student in acquiring a clinical foundation in order to be useful at the bedside. The general practitioner, representing the unity and connection of the various branches of medical practice, must grasp the practical details of his art, and a reference book, to be of practical value to the family physician, should convey clinical experience without the exhaustive and often purely theoretical details to be found and sought for in monographs. Dr. Caillé's book is built up on a purely clinical basis, and differs from other books of its kind because it attempts to re-establish the divorced relations of internal medicine and surgery, and because it presents specialistic methods from the viewpoint of the general clinician. Well-tried and valuable formulas are distributed through the book, and some of the chapters have a special formulary. The work is made attractive by practical illustrations, and each chapter is prefaced by a synopsis of its contents and by brief remarks on the clinical pathology of its subject. To all who are interested in rational modern medicine this book will be a companion in leisure hours and a ready counselor.

A System of Medicine.—By many writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College, and Humphrey Davy Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital and to the Victorian Hospital for Children; sometime Fellow of St. John's College, Cambridge. New edition revised throughout, with additions. Volume I. New York: The MacMillan Company, 1905. Octavo; pp. 1209. Price, $5.00.

The second edition of this classical work is intended to be brought out, one volume a year, each new volume corresponding to one of the first edition. In this way the original edition will be gradually superseded by the new. The new edition is more than a mere revision. In most instances the articles have been so changed as to be fairly regarded as new matter. The present volume is introduced by a masterly contribution on the history of medicine by Professor Clifford Allbutt and Dr. Payne. The articles on Medical Statistics, Medical Geography, Old Age, Dietetics, Exercise in the Treatment of Disease, and on X-Rays, Prolegomena, General Pathology of New Growths, Fever, Some of the Acute Infections, etc., are all written by men eminent in the profession, and specialists in their respective subjects. Volume II., which is expected to appear this year, besides other subjects, will cover the field of Tropical Diseases. The work cannot be commended too highly.

Nervous and Mental Diseases.—By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M.D., President of the State Commission in Lunacy, New York; Clinical Professor of Neurology and Psychiatry, Columbia University. Fifth edition, revised and enlarged. Octavo volume of 937

pages, with 341 illustrations. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth, $5.00, net; half morocco, $6.00, net.

It is not at all surprising to us that a fifth edition of Church and Peterson's work should be necessary. Indeed, such a success was to be expected from what is undoubtedly the most complete and authoritative volume on nervous and mental diseases to-day. In preparing this edition Dr. Church has carefully revised his entire section, placing it in accord with the most recent psychiatric advances. In Dr. Peterson's section—Mental Diseases—the Kræpelin classification of insanity has been added to the chapter on classifications for purposes of reference, and new chapters on Manic-Depressive Insanity and on Dementia Præcox included. While the changes throughout have been many, they have been so made as but slightly to increase the size of the work. A number of the illustrations have been replaced by newer and better ones. We can confidently say that this work will maintain the reputation already won.

A Text-Book on Modern Materia Medica and Therapeutics.—By A. A. Stevens, A.M., M.D., lecturer on Physical Diagnosis, University of Pennsylvania; Professor of Pathology, Woman's Medical College of Philadelphia. Fourth edition, revised. Octavo of 670 pages. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth, $3.50 net.

The fourth edition of this excellent work on practical therapeutics appears at a most opportune time, close upon the issuance of the Eighth Decennial Revision of the Pharmacopeia to which it has been adapted. The author, by his extensive teaching experience, has acquired a clear, concise diction that adds greatly to his work's pre-eminence. New articles have been added on Scopolamin, Ethyl Chlorid, Theocin, Veronal, and Radium, besides much new matter to the section on Radiotherapy. The numerous changes in name or strength of various drugs and preparations, as called for by the new Pharmacopeia, have also been made. The book is commended as one of the best of its class.

Dose-Book and Manual of Prescription-Writing: with a List of the Official Drugs and Preparations, and the more important Newer Remedies. By E. Q. Thornton, M.D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. Third edition, revised and enlarged. 12mo; pp. 392; illustrated. Philadelphia and London: W. B. Saunders & Co., 1905. Bound in flexible leather, $2.00, net.

A glance at the contents of this book fully explains its attainment of a third edition. In addition to the consideration of the official and the more important non-official preparations intended for internal administration, weights and measures, solubilities, and incompatibilities, attenton is given to the grammatic construction of prescrptions, illustrated by examples. In revising the text for this edition the author has made it conform with the new (1905) Pharmacopeia, the radical change in strength or name of many chemicals, drugs, and preparations already official, and the admission of many newer remedies necessitating the rewriting of a number of sections. We notice in the Appendix an addition of much value—a table showing the change in strength of important preparations, and also a list of average doses for adults in accordance with the new Pharmacopeia. Dr. Thornton's Dose-book is, as it always has been, accurate and up to date.

CORRESPONDENCE

EMUNCTORY MEDICINE.

To the Editor of THE MEDICAL TIMES:

"Throw physic to the dogs." Shakespeare uttered a commendable recommendation in these words for some persons sometimes. Too much physic has been taken into the human stomach and not the proper attention paid to the emunctories or elimination of noxious matter; purify the system of self-poisoning or auto-intoxication. The eighteenth century passed into history as a poly-pharmaceutical one. Montaigne, stone afflicted, wrote: "I was the other day in company where some of my fraternity (like afflicted) told us of a new set of pills made up of a hundred and odd ingredients." The practice of that time and earlier provoked much of the evil said of the profession. Not the least unfavorable comments are these words:

"Trust not the physician:
His antidotes are poison, and he slays
More than you rob."

Physic, like other human things, contains good and evil, and bears testimony to the truth contained in the lines of Philip James Bailey, author of Festus:

"With man all good hath evil;
With God evil is itself good."

The hydropaths showed good records in their day in the treatment of diseases. They excremented, washed out, their patients. This sect did their work too violently and sedulously. The reforms effected by them are still existing though this age has neglected to give proper credit for their labor.

The Hahnemannians showed favorable results in their treatment of disease as contrasted with other methods then prevailing. They did not impair the human body by unfavorable exhibition of drugs and impairment of excrementitious labors on the part of the body. They also studiously avoided injuring the system by deleterious feeding. The dietary prescribed by some Hahnemannians would displease epicures and reduce the value of life in the minds of some. Their practices tended to prevent overloading the system, thus reducing the functions of the excrementory organs and congestion of detrite material. These two sects worked reforms. Medicine has been less injurious because of their existence.

Every manifestation of life, every function is attended by a change of matter that causes it to vary in relation to proper live tissue. Every thought causes a retrograde change in matter, a catabolism. Every sensation has its impairment of compounds and requires the escape of detrite substance or there is development of vitiated states in the body. Grief manifests itself either in profound nervous prostration or the escape of excrementitious matter. When sudden pangs of grief are retained fear for the life of the person is entertained, but when the lachrymal glands are excreting fear is reduced. If the shocks of grief are sufficient to paralyze the excrementories death may result. Ignatia is prescribed for this paralysis and thus loosen the retainers of evil by excretion.

The poisonous materials that affect the brain in diseases need different remedies according to the nature of

ailment. In uremic coma the brain is surcharged with noxious matter that should be eliminated. The urine is retained and perspiration checked. For this form of defective excrementation or to prevent it give pilocarpine or infusion of digitalis and hot baths, air or water.

The mucous membrane of the respiratory tract is a prominent example of the failure of emunction. True catarrh of this membrane is a rare disease, but so-called "nasal catarrh" is a fad with many persons. The word catarrh means to flow. The ordinary disease referred to as catarrh is characterized by a reduction of the flow or secretion of the membrane. Instead of the membrane being evenly moistened by a thin fluid there is a heavy secretion which does not flow but accumulates on the surface and produces annoyance. The six turbinated bodies of the nose in health secrete one pint of fluid daily which moistens the inspired air and the membranes. This fluid is a secretion, not an excretion, whose specific gravity and limpidity is nearly that of water. It is bland as that of the eyes or mouth. In the impaired condition of the mucous membrane of the turbinated bodies, improperly designated as catarrh, the quantity of substance given off is much reduced. The thickened substance is more nearly an excretion, because it fails to perform as useful a part as the healthy fluid, and efforts are required to get rid of it. The condition producing this thick excretion should be designated rhinitis or turbinated hypertrophy, as there is a condition or result the opposite of catarrh. The word catarrh as related to the ordinary ailments of the respiration membranes should be avoided. The true pathology of disease of the nose and breathing surface should be recognized and expressed.

It is common practice to apply astringents to the membrane for this rhinitis when relaxants would be more philosophical. Errhines have a very beneficial effect and are commendable in cases. Pledgets of cotton saturated with thuya and cotton-seed oil is an admirable application. Trichloracetic acid will reduce hypertrophy of the turbinates. The escharotic is not attended with as much swelling when chromic acid is used. Eucaine and adrenalin chloride will reduce the fullness of the soft turbinates and permit the insertion of glass tubes to keep permanently patent the nostrils. These tubes may be worn for days thus performing plastic operations without drawing blood. Springs made of gold plated wire, spiral shaped, have also been used for continued dilation and absorption of tissues. The electro cautery is useful as an escharotic. Metallo-electric dilations fit in nicely sometimes. Where stenosis of nostrils is due to hard tissues or deflection of septum use forceps, drill, trephine, punch, saw or chisel and mallet.

A cause of nose and throat disease is too small respiratory openings and these openings are further reduced by excessive brain action, congestion and paralysis produced by inhaling dry air and carbon dioxide, which surround persons following sedentary and indoor pursuits. The suction and compression of the turbinates during respiration constantly tend to increase of disease. Increased size of nostrils reduces the action of these causes. The turbinates resemble the foolish armadilla, which burrows into the carcass of an animal, fattens thereon and becomes so lethargic that it cannot perform requisite functions for continuing life and dies, atrophic.

The lungs excrete more waste substance than other organs of the body. Impairment of lung function causes more deaths than any other cause. The lungs absorb 11,000 grains of oxygen and throw off 4 2-3 pounds of waste matter daily. The excretion consists of water, carbon dioxide, ammonium, and impurities of a poisonous nature. They killed 123 persons in 146 in one night while confined in Black Hole, Calcutta. These impurities have not all been isolated and named. Experiments have demonstrated their highly deleterious nature. These impurities are probably gaseous ptomaines, the products of phagocytosis, which is constantly going on in the blood. This phagocytosis, which means the destruction of bacteria by leucocytes, or the white corpuscles of the blood, is necessary that health may be maintained. The product of phagocytosis which the homeopaths had among their nosodes and called tuberculin, is believed to be the same as the Koch lymph. Its power to kill is certain; its power to cure is doubted. The elimination of these poisons from the lungs is of great importance. Pure atmosphere of an invigorating temperature and proper density and vitality will supply oxygen to purify and lung gymnastics aid in carrying off these products. A thorough cleansing and invigoration of the lungs and system may be secured by careful lung exercise in a medium composed of pure oxygen and nitrogen monoxide; especially is this recommended to one in poor health.

It is believed to be possible for the lungs to perform the whole of emunction or excretion; thus permitting the removal of other excretory organs or their suspension of action. A patient was under treatment who had but one fecal action in two or three weeks for some years. This patient was relieved of most excrement through the lungs. Respiratory gymnastics are more physiologically and effectively made by proper attention to the nostrils and correction of impaired conditions.

The kidneys elminate three pounds of urine in health daily. The components of urine are: water, urea, uric acid (an oxydized urea) hippuric acid, creatinine, extractives, sulphuric acid, phosphoric acid, sodium chloride, etc. These substances should be thoroughly eliminated from the system and prevented from accumulating unnaturally and concreting in the bladder. Secure complete discharge of the urine by urinating in the prone position. The best substance for cleaning and keeping clean the urinary organs is the free use of pure hot water. Water may be made more effective in some cases by the addition of potassium and sodium salts. Where there is trouble from accumulation in the bladder stretch the urethra with sounds.

The rectum discharges about five ounces of matter daily in health. This discharge is favorably influenced by thoroughly dilating the sphincter ani, keep the mucous surfaces free from obstructions, removing surplus tissue, regularity in response to the needs of nature, flushing the rectum, ingestion of fruits, coarse sand, laxatives of mineral salts, with plenty of water, vegetable laxatives occasionally, gymnastics, massage of bowels with hands and rolling of soft-covered cannon ball over the abdomen. Make the matter of time of emptying the bowels more important than the time of taking food. Be prompt and regular. Do not become the slave to vegetable or mineral laxatives. Assist the system by strengthening the natural internal restorative force.

The skin is an important emunctory organ. From it two pounds of matter are daily excreted in health.

It is reported that a jockey being too heavy to ride reduced his weight twelve pounds by active exercise in heavy clothing in a single run. Two men lost eight pounds playing hand ball in one hour. This would indicate a water-soaked system and that some people are overburdened. The skin excretes water, carbon dioxide, urea, organic substances, lactic acid, sodium lactate, sodium and potassium chloride, iron, phosphorus, etc. Pilocarpine is an excellent diaphoretic and removes excess of water in tissues as obesity, dropsy and hindered breathing caused by water about the heart. Thermal baths render the skin more excretory. Cold baths are tonic and act favorably on the thermogenic nervous centres, increasing the heat production of the system, thus enabling it to withstand exposures. Cold baths, like exercise, should be taken intelligently and never used when one finds the system does not show increased vigor. The temperature should be gradually reduced from bath to bath and not too low temperatures entered by the unaccustomed. One must acquire ability to endure cold baths as one does vigorous exercise.

The idea in this paper is to appreciate the importance of removing from the system injurious materials instead of constantly introducing them into the system. The system saturated with detrite material is weakened in all functions. The late Prof. S. D. Gross, when asked if he would bleed patients ailing with pneumonia, replied that "he would in certain stages and the results of its early practice were better in the treatment of this disease than the present practice." The present practice is not satisfactory. May not phlebotomy be more philosophical and physiological than some present methods, in that it removes obnoxious material?

J. P. Geppert, M.D.

Cincinnati, O., December, 1905.

Oedema, declares Mann (*British Med. Jour.*, May 20, '05), when due to cardiac lesions, is essentially hydrodynamic in its origin. To some extent it may result from the back pressure of the blood, the chief factor being an increased permeability of the vessel walls, due to lack of oxygen and of nutrition. Renal œdema is more difficult of explanation; it may be due, among other causes, to changes in vascular epithelium, produced by waste products in the blood, and the defective elimination of H_2O. Attention has recently been called to the close relation between the retention of sodium chloride and the occurrence of œdema. When the heart alone is at fault, physiological rest is a therapeutic essential. Digitalis is among drugs the most efficacious. The purin derivatives, caffein, theobromin and theocin are valuable in renal incompetence; among these the first is the most active cardiac stimulant and the last the most powerful renal stimulant. Diuretin is appropriate. With any of these digitalis may be combined. Diaphonesis may have to be induced, if the kidneys cannot be made to act. Cathartics are of little value. Diet is of importance. Salines should be restricted. A moderate amount of solid food, low in proteids, may be allowed. When the volume of urine is ample the intake of liquids needs no restriction; when the urine is scanty, states *American Medicine,* the liquids should be regulated by the daily weight of the patient, an increase of weight calling for their restriction.

RETROSPECTIVE THERAPEUTICS

..**The Spirochæta Pallida** was exhaustively considered, with regard to the likelihood of its being the specific cause of syphilis, by Dr. Simon Flexner, in the Wesley M. Carpenter lecture recently delivered before the New York Academy of Medicine. Dr. Flexner chose for his subject the *Etiology of Syphilis.* No certain claim can yet be made; yet it is hoped that a definite result may have been achieved. He described inoculations of monkeys with syphilitic virus; and considered that these experiments proved not only the susceptibility of certain monkeys to the local lesions of syphilis but also the possibility of successive transmissions of the virus from animal to animal. The use of animals has solved certain questions relating to the manner of entrance of the virus into the organism and the comparative virulence of different products of the infected animal; some explanation might thus also be forthcoming concerning the vital question of reinfection in syphilis. Lesions were produced by cutaneous inoculations with primary syphilides and primary lymphatic glands. Subcutaneous injections of chancre and condylomata produced no specific manifestation. Insertion directly into the peritoneal cavity of infected glands was without effect. Such was also the case in the two latter instances with defibrinated blood and blood serum from cases of recent syphilis in man. And blood serum from human syphilis was also without protective action against subsequent inoculation with active virus. The internal organs of recently infected monkeys and apes possessed neither infective nor protective properties of high degree. These are Neisser's results, which bear upon the relative infectiousness of the blood and internal organs of syphilitics, and which throw light concerning the avenue through which the virus enters the body and its ability to enter directly into the interior and to cause the secondary lesions without first having undergone incubation at some local superficial site. The poison is easily destroyed by low degrees of heat (at 51° F. particles of chancre and condylomata were rendered inert in one hour). Flexner related the early experiments which revealed a spirillum—*the spirochæta pallida,* in the interior of a chancre and a mucous patch. This organism is in extent from four to ten microns, and has a width varying from immeasurable thinness to one-half a micron. (And here we may note, in passing, one reason at least, why the infective agency in many diseases has not yet been discovered—that no microscope powerful enough, no technique delicate enough has yet been perfected, which would be essential for such discovery. For instance, the Koch bacillus is three or four microns in length; and is not easy of detection with a 1-12 inch oil immersion lense). The spirochete has from three to twelve sharp and regular curves; it is a motile organism, in which flagella have not been discovered. With most stains recommended it is tinged so lightly that one finds it with much difficulty; hence the qualifying adjective. The fluids obtained from the interior are most favorable for examination, because here the organism is less likely to be mixed with coarser kinds of spirilla or with other bacteria. Flexner believes that the morphological characters of the spirochete (upon which we must at present rely for its identification) are sufficient to distinguish it in a specimen from a specific lesion, but possibly similar morphologi-

cal forms occur in nature among the saprophytic organisms. The evidence is now conclusive that the spirochete is contained in primary lesions constantly, or at least, in the majority of cases. The ulcerated papules of the mucous membranes of the mouth and throat seem to contain this organism in good numbers and to be especially suitable for demonstration. Flexner believes the evidence thus far educed to be still inadequate; yet the presence of the spirochete should be sought systematically to confirm or prove the diagnosis; thus may valuable time be saved, and many stigmata of the disease may possible be avoided. The spirochete occurs in gland juice; but long search may be required to find it. Flexner has always tried to get aspirated fluid containing masses of gland cells, since the blood alone is not likely to yield the organism. It must be found in the regional lymphatic glands, if it is to have any position as the probable cause of syphilis. A question as yet unsettled whether the spirochete invades the deeper parts of the body and whether it inhabits the circulating fluid; in neither of two cases studied by Flexner was it found in the centrifugalized blood specimens. There is, however, abundant evidence of its distribution by the general circulation, so that it would appear to be taken out by the blood-vessels of the skin and mucous membranes, and possibly the internal organs. It seems to Flexner fair to assume that the inflammatory and productive lesions were associated with, and perhaps caused by, this localization, though it is as yet *sub judice* whether the direct causes of the vocal reaction are vascular emboli or perivascular infections. A question of much importance is suggested by the great length of time during which the germs of syphilis must, under some conditions, endure in a living state in the body. Here is constituted a fact of high importance in the history of the recurrences and the congenital transmission of the disease. Is there reason to believe that congenital syphilitic manifestations are associated with the occurrence of *spirochæta pallida;* are the number and distribution of this organism such as to explain the lesions and the infectiousness of this disease; does the spirochete exist equally in those cases of congenital syphilis, which were the offspring of a parent suffering with florid syphilis, and of another in whom the disease had not manifested itself for many years? The evidence at hand would indicate that the organism may survive in the body for many years and may be transmissible by a parent, herself free from the usual signs of the disease. There are sufficient records of examinations of infants (the subjects of congenital syphilis) to show that the organism regularly occurred in the disease. It is established that congenitally syphilitic children can infect healthy persons; and in conformity with this fact Bakes and Panea were able to demonstrate the spirochete in the pharyngeal and conjunctival secretion of such children. The establishment of the spirochete as the cause of syphilis has therefore been done only in part, so far as the study of congenital syphilis is concerned. Perhaps data may in the future be secured bearing upon the question whether the placental circulation is or is not previous to syphilitic virus, and thus light be shed upon those cases in which the child has become infected from a post-conceptional infection in the mother, and possibly only on that remarkable condition of supposed immunity. In conclusion, Dr. Flexner emphasized that his opinions at present are tentative and should be thus understood.

Rhus Toxicodendron Poisoning.—McKee, E. S., M.D., Cincinnati, has found *Experimenta Docet* to be true, and feels that having had rhus tox. poisoning twice he knows more about it than he did before, and should be allowed to speak, somewhat, *ex Cathedra.* At the big trees at Santa Cruz, California, he contracted the first case in 1897. It came out beautifully in San Francisco, caused much suffering through the hot Sacramento valley, found some relief from bathing in the waters of the soda springs of Mt. Shasta. A weak phenol solution obtained at Portland afforded temporary relief, but a plunge and a swim in the hot lake at Mammoth Hot Springs, Yellowstone Park, gave complete and permanent alleviation. This case is noteworthy, principaly from the novelty and variety of its treatment.

The second case was contracted by running into a bush returning from a night call in Sedamsville, a suburb of Cincinnati. The next morning the inflammation occurred and the second morning both eyes were out of sight and the eruption was all over the body, the little twin blisters burning and itching like fire. He had no rest, except under drugs, for a week, and not much for three weeks. The relentless burning and itching put him as near the crazy line as he cared to get. Everywhere he touched himself with his poison-ladened hands the disease was spread or aggravated. Weak carbolic acid lotions gave but temporary relief, as did also carbolic salve. Solution of borax gave but brief comfort. Lotio Plumbi et Opii gave more comfort than anything used so far. Powdering the whole body with rice powder gave more ease and lasted for two or three hours. He had great expectations from Burrows' Solution, Saturated Alumini et Plumbi acetat, which was only partially realized. A tablespoonful of this was put in a pint of water and used as a lotion. In his frantic efforts to rid his hands of the poison, thereby stopping the spread and aggravation of the trouble, he found that a thick lather of soap gave a degree of comfort, and the more ordinary (stronger) the soap the more extraordinary the solace. Alcohol in the ordinary strength added fuel to the flames, but alcohol dilution of the U. S. P. gave much ease. He found the following most useful in relieving the burning and itching and stopping the spread of the disease: ℞, alcohol, 53.00; aquæ distillatæ, 47.00; plumbi acetatis, q.s.; ut fiat solut. sat., S. Apply. This would give relief for a whole night. Pfaff, of Harvard, discovered the toxicodendrol, an alcohol soluble fat resembling croton oil. Alkalies to a degree saponify the fat and give relief, but alcohol is the eradicator *par excellence.* Exposed again he would as soon as possible wash his hands in the alcohol dilute of the U. S. P. to dissolve and remove the poison. If he reached the alcohol within an hour or two he thinks the disease would be aborted. Otherwise he would then apply to any part where the vesicles had appeared the saturate solution of the lead acetate in the dilute alcohol previously mentioned.

He found the nervous symptoms a very serious complication in his last case, for which he took 2.00 gramme doses of bromide of sodium, four to six times a day, with two drops of Fowler's solution with each dose, to prevent acne bromata. He claimed and obtained accident insurance.

Tetanus in children is curable, states Swift (*Australasian Med. Gaz.,* June 20, '05), only by means of the injection of antitetanic serum, at the earliest possible moment, with vigorous antiseptic treatment of the wound. Under no other treatment is recovery possible; in any event, it is very rare indeed. Anders and Morgan, in a preliminary report (*Jour. A. M. A.,* July 29, '05), find convincing proof that tetanus invariably results from the introduction of the germ, and that the so-called rheumatic or idiopathic tetanus has no existence. It is endemic in all large communities. In some localities where it was formerly endemic, as in Long Island, it has become rare. Small epidemics occur in limited localities where they can be traced to a definite source, as a hospital. It is most prevalent, as a rule, in the warm months; males are more subject to it than females; it is less frequent in advanced age; the robust are more susceptible than the weak; the nervous more than the lymphatic. It is in all probability transmissible, and may give rise to epidemics. The specific cause, Nicolaier's bacillus, enters usually through open wounds; it is rarely introduced by the digestive tract. Among the 1,200 cases studied by these authors the characteristic symptoms, especially trismus, were generally present. The diagnostic importance of the tonic contractions as opposed to the intermittent type of contractions in such conditions simulating tetanus as strychnine poisoning, is dwelt upon. The mortality decreases gradually after the tenth day, and more rapidly after the fifteenth. Immediate radical local treatment is important; the wound must be opened freely in all directions under general anæsthesia. Carbolic acid locally may be efficacious; good results may be obtained from the local use of ice or of freezing mixtures, or treatment in a cold room. As palliatives, chloral and the bromides are indicated. Calabar bean has been much used. Morphine should be used with caution, on account of its inhibitory action on the respiratory centers. The testimony of all observers is uniformly in favor of antitoxin treatment; the serum should also be injected in cases of suspected tetanus. "In a well-developed case it has no appreciable beneficial effect, neither reducing the mortality nor hastening recovery."

The passing of bromism in epilepsy is the subject of comment in the *N. Y. Medical Journal* (Aug. 19, '05). The bromides are of suppressive value in this disease; but suppression is not cure. They may hold attacks in temporary abeyance while other forms of treatment that aim to remove the cause are applied. The dosage is generally much too large. As a routine treatment, no more than from 12 to 20 grains should be given three times a day. Emergency doses, to check serial attacks or to relieve the status epilepticus, may be much larger. Among the factors which may account for the disappearance of bromism in epilepsy are: (a) The recognition of the necessity for the treatment of the individual as a whole organism in contradistinction to the treatment of a single symptom. (b) The use of such depressants as possess the virtues of the bromides, but not their faults; for example, the pure bromide in oil of sesamum, given in the form of an emulsion. (c) The use of Toulouse's method of a diet poor in salt to augment the value of relatively small doses of a bromide. Ten grains of bromide is thus as effective ordinarily as twenty grains when no check is put upon the amount of chloride of sodium that is consumed in the food. Asylum experts often come upon cases of bromide dementia—a condition which usually clears up after withdrawal of the drug. Such cases are now of great rarity, although the admissions are much more frequent than formerly. "The more completely one can get away from the idea that epilepsy is simply a convulsion and nothing more, a disease with one fixed symptom, to be cured by one drug, the more gratifying will be the rate of recoveries."

Cerebro-spinal Meningitis.—The practitioner should at this time be on his guard against this dreadful disease, and should be well equipped to fight it. Francis Huber, who has had much experience, declares we should not lose sight of the large proportion of malignant cases, the grave character of the anatomical changes and the great irregularity in the clinical course. One cannot predict the subsequent progress from initial symptoms. Treatment is entirely symptomatic. The case should be isolated in a well-ventilated room and general nutrition kept up. An ice bag often gives comfort. The bodily functions should be regulated. Forced feeding through the mouth or nose may be indicated. Chloral per rectum or morphine per os or hypodermatically may be given to relieve pain and restlessness or convulsions. Phenacetin, with or without codein, may be given to relieve headache. Severe vomiting in the latter stages has been relieved by lumbar puncture, small hypodermics or morphine, ice in the epigastrium and careful dieting. Sodium benzoate, or caffein subcutaneously, relieve pulmonary œdema. The iodides may cause absorption of plastic exudates. Local bleeding by leeches is ineffectual. If there is chronic hydrocephalus, repeated tappings at intervals of a few days are indicated. From 10 to 15 c.c. of fluid may be removed in order to influence intracranial pressure; not more than 20-30 c.c. should be taken away, unless evidences of pressure are very marked. Hypodermoclysis, if given early, may overcome the initial shock and prostration after the removal of the fluid; and may possibly dilute the toxins and supply fluid to the tissues. (Lumbar puncture is done as follows: The patient lies on the side with thighs and body flexed; strictest antisepsis; an aspirating needle is introduced on one side of the median line upward and inward into the third lumbar interspace, until its point enters the spinal canal and the fluid flows out drop by drop. It will usually be turbid, purulent or bloody; and will contain the diplococcus intracellular meningitides.

Fungus poisoning is discussed by Plowright (*Brit. Med. Jour.,* Sept. 9, 1905), who states that most mushrooms and other fungi are not poisonous. The vast majority of deaths are caused by one species, the *Amanita phalloides,* which owes its lethal power to a toxalbumin—phallin. The most commonly observed symptoms are vomiting, occurring about ten to twelve hours after eating the fungus, diarrhœa, pain in the abdomen, cramps of the stomach and diaphragm, intense thirst, cold sweats, collapse, sometimes headache, delirium, more or less complete suppression of urine, slight but distinct jaundice in severe cases, subnormal temperature and sometimes cramps in the limbs. Post-mortem shows absence of cadaveric rigidity, marked hypostatic

discoloration, inflammation of the alimentary mucosa, localized ecchymoses of the liver, digestive tract generally, pleura and lungs, enlarged solitary glands, fatty degeneration of the liver, fluidity of the blood and meningeal hyperæmia. Emetics (which are however generally not necessary as there is much unassisted vomiting), morphine to relieve suffering, and potassium manganate (to decompose any phallin left in the stomach) are the therapeutic indications. The *Amanita phalloides* is recognized by the cup-like base of the stem, the permanently white under-surface and gills, the shining, pale-greenish, or yellowish-white top and the fact that it never grows far away from trees, especially oaks.

Hyoscine in Paralysis Agitans.—In the treatment of this most intractable disease, which generally is progressively unfavorable in its course, any new plan is entitled to consideration. Higier (*Neuralog. Centralb.*, May 16, 1905) has used hyoscine with fair results not only in this affection, but also in intractable chorea and in various neuroses. In paralysis agitans 1/200—1/100 grain of hyoscine were given in fifty cases during periods covering a year; one patient took it in alternation with duboisine for seven years. A pill given before the midday meal induced a feeling of languor and sleepiness after the meal with dryness of the throat, followed by sleep lasting about an hour, and succeeded by a quiescent stage of from three to four hours, during which there was no tremor. There was generally a persistent lessening of the tremor. Sometimes there was intolerance with quickening of the pulse and forty respirations to the minute, dimness of vision and hyaline casts in the urine. In cases which tolerated it, the prolonged use of the drug produced no ill-effects. In three cases of intractable chorea (one of which was a case of chorea gravidorum), arsenic, the bromides, salicylates, chloral and morphine were ineffective. Here 1/200 grain doses of hyoscine daily reduced the violent movements within a week. Daily doses of 1/100 grain were effective in senile pruritus; in some such cases hyoscine was combined with antipyrin. The drug was decidedly effective in these doses in spasmodic asthma, subcutaneously in conjunction with caffein; between the paroxysms Higier gives this combination in minute doses for weeks. He has used hyoscine in morphinism with good results; but it was unsatisfactory in alcoholism and recurrent mania. In acute mania a hyperdermic of it gives some nine hours of good sleep, with consequent general mental improvement; here, however, heroic doses (1/30 grain) should be given, and only when other drugs have failed.

In the treatment after the removal of adenoids Krebs (*Centralb. für Kinderheilk*, June, 1905) emphasizes two indications: the undisturbed healing of the wound should be promoted; recurrences (which are so frequent) should be prevented. The wound had best be left to itself, and insufflations, sprays, brushes or collunaria should be avoided—the latter being especially liable to promote middle ear suppuration. During the first few days only a two per cent. solution of peroxide of hydrogen should be used as a gargle, which, of course, never comes in contact with the wound, but it sterilizes the region about it and dispels much of the bad odor. The diet should be fluid and cold for about five days, when ordinary diet (except sharp and peppery foods and crumbs) may be taken. Dust particles should not be inhaled. Children should be kept from school for a week. Coughing immediately after the operation may indicate a small piece of tissue not entirely removed, and still adherent to the pharyngeal vault by means of mucous membrane. The operator should never be content until all bleeding is stopped. If after removal of all remnants (best done with a pair of cutting forceps) and all bleeding has stopped, the cough still continues, no doubt the cause is simply reflex, set up by the irritation of the wound. This will soon subside. Post-operative hemorrhage is rare, but a complication always serious. The quality of the instruments and the experience of the operator have much to do with this. There should be absolute rest, elevation of the head, loosening of all clothes around the neck, sucking of pieces of ice and (in bleeding from the upper air passages) deep inspirations through the nose followed by light expirations through the mouth. (Upon this Krebs lays great stress.) The deep and forced inspirations diminish the pressure in the superior vena cava and its tributaries in the neck; consequently the blood will be held a little longer at its point of egress from the vessel, and will therefore be able to clot easier. Krebs warns against the use of Bellocq's sound in obstinate cases, declaring that pressure is thus applied to the posterior ends of the turbinates, and not at all to the bleeding surface. He uses a small piece of wool or gauze soaked in vioform or (if nothing else is at hand) perchloride of iron, by means of long pharyngeal forceps. (We would suggest also styptic cotton.) After continued pressure in an up-backward direction the forceps should be cautiously opened and withdrawn, leaving the tampon if possible. There is occasionally a fever, which Krebs cannot explain for all cases. Two or three days in bed will bring this temperature back to normal. Rarely it is due to follicular tonsillitis or to erysipelas, or to otitis by extension from the pharynx. A painful stiffness of the neck may supervive for several days in cases where it has been found necessary to scrape the region of the upper cervical vertebræ; no doubt the periosteum of the atlas and axis have here been scraped. No treatment is required. Thorough removal of the growths are necessary to obtain the second object of treatment—the prevention of recurrences. There should be examination of the vaso-pharyngeal cavity in about a week after the operation. Any newly-formed tissue should then be removed with the finger well sterilized—a procedure very easy and effective at this time, when the tissue is unusually soft and spongy. Internally iodine and iron are administered (Krebs recommends sol. ferro-manganiodo-peptonata, ʒi t.i.d.). After operation instruction against mouth breathing should be instituted.

A City of Consumptives is described by the *Medical Review of Reviews*. The National Fraternal Sanitarium, acting in the interests of 8,000,000 members of fraternal organizations in the United States, have accepted the one-million-dollar tender of the Santa Fé Railroad, and ten thousand acres of land given by the city of Las Vegas in New Mexico. A new community—Fraternal City—will be built six miles west of Las Vegas. It is to be practically a sanitarium for consumptives, maintained by per capita contributions of members of the great fraternal and religious orders. The gift of the Santa Fé Railroad includes the $500,000 Montezuma Hotel building in the Rio Gallinas Cañon, with several structures in the vicinity, several hot springs and 1,000 acres of land. By the fall of 1906,

the plant is expected to be in good running order. Five thousand patients will be received, this number to be increased indefinitely, as rapidly as funds are available. Fifteen representatives of fraternal and religious orders will form a board of managers, in whom the government of the sanitarium will be vested. The basis will be common ownership, with profit to none. Most of the patients will come from the organizations interested; others will, however, be admitted upon the payment of a small fee. Those wishing occupation may engage in stock farming or other work incidental to the operation of the enterprise.

Glycocholate of Sodium in Liver Diseases.—Richardson (*N. Y. Med. Jour.*, Sept. 30, 1905) declares that the bile salts are the only real cholagogues. Their presence in the blood stimulates the liver. They dilate the blood vessels in small doses and constrict them in large doses; they slow the heart-beat by direct action on the heart muscle and cardiac ganglia, and when present in the blood in too large quantity cause pathological effects and may lead to coma, stupor and death. The absence of glycocholates and thoracholate from the blood leads to the formation of gallstones. If gallstones are placed in healthy gall-bladders they will be absorbed in a few months by the solvent action of healthy bile. In jaundice there is a stasis of the bile from whole or partial occlusion of the ducts. As long as the occlusion lasts the sodium glycocholates are contra-indicated, but as soon as the duct is patulous the fluid in the bile should be increased by copious administration of alkaline waters, and sodium salicylate and sodium glycocholate should be given to dissolve the pigment and hasten its elimination by the intestine. The latter drug is useful in the early symptoms of hepatic cirrhosis when there is discomfort and weight in the hypochondrium, the skin harsh and dry and "liver spots" appear. Not only does this salt increase the bile flow, but it helps the absorption of the fats and also aids peristalsis. It is most important of consideration that many cases of chronic constipation (a condition so persistent) can be gradually overcome by means of this treatment. After operations for gallstones the glycocholate should be administered to prevent the stones reforming. It aids in dissolving stones that have already formed. The dose is five grains tid.; although fifteen-grain doses will not occasion nausea. The action is cumulative; so that the full dose should not be kept up for any length of time. In hepatic colic the administration may be continued for some months. Half an ounce should be taken in a month as a prophylactic measure. It is indicated in all forms of hepatic insufficiency in conjunction with other treatment. It is a valuable adjuvant in the treatment of arteriosclerosis.

The Rockefeller Institute for Medical Research, to which Mr. Rockefeller has given three millions of dollars, is ready for occupancy. The site, at the foot of East Sixty-sixth street, includes twenty-six city lots. The buildings are extremely handsome, of gray brick, with limestone trimmings. The main structure is 60 by 150 feet, and is five stories in height; its first story contains administration offices, library and assembly hall; on the second floor are physiological, chemical and pharmacological laboratories; and all the machinery, such as presses, centrifugal machines and distilling apparatus; above, the building is to be devoted to experimental pathology and bacteriology. The fifth story provides space for photomicography; and here are accommodations for artists and other assistants who may have to pass the night in following experiments. The entire roof will be covered by an animal and bird house. There is also an animal house on the grounds; here creatures from horses to guinea pigs will be kept for experiment in the study of disease or in the preparation of antidotes and sera.

This Institute is the first of its kind in the United States. It was founded five years ago by Mr. Rockefeller on the death, from dysentery, of his infant granddaughter. The board of directors is headed by Dr. W. H. Welch, of Johns Hopkins; Dr. T. M. Prudden, Dr. L. E. Holt, Dr. C. A. Herter, Dr. Simon Flexner, Dr. H. M. Biggs and Dr. Theobald Smith are Dr. Welch's associates. To obtain immediate results this board has established nearly twenty scholarships in various laboratories in this country and has also sent several medical men to Europe to pursue investigations there. After the first year the home of the Institute was definitely established in New York City, which was agreed to be the American centre of medical teaching.

Clinical Medicine.—Cabot and Locke (*Bost. Med. & Surg. Jour.*, Oct. 26, 1905) present some excellent ideas of how medicine should be taught. There should be more practical instruction. There should be greater diversity in the methods of teaching—corresponding both to the different aspects of the study and to the different stages of the student's development. The proper keeping of records should be taught—a very important consideration. It is really deplorable to think of the amount of valuable scientific material which goes to waste because of the hospital interne's and the practicing physician's lack of training in this regard. There is need of broader training in the use of literature. Of this Osler has always been a most consistent and insistent advocate. Not only should medical literature be studied, but *belles lettres* should receive more attention than is usually bestowed upon this graceful broadener of the intellect.

More section work is advocated, and a wider use of pictures in teaching. The stereopticon should here prove a valuable aid. There should be an increase in the amount of independent work, and examination of the ability to practice medicine rather than to write or talk it. With regard to teaching there should be adequate supervisions, correlation and criticism.

A scheme for the Sanitary Control of the Municipal Milk Supply is advised by Goler (*Amer. Med.*, Oct. 21, 1905). There should be established a bureau of milk inspection, with the chief sanitary officer at its head, empowered with the granting of licenses for the selling of milk. Boards of medical men and scientists should compile rules for the production and distribution of milk of higher nutritive valve and lower bacterial content than ordinarily good city milk. There should be insured, either directly or through the inspectors appointed by the commission itself: The character of stables and the feed of cattle, the health of milkers and the care of utensils; a negative tuberculin test; a bacterial standard (not greater than 10,000 bacteria per c.c.); a nutritive value of 12.5 per cent. of solids, of which 4 per cent. must be fats. Only by means of such organization as is here advocated may the producer and the vendor be under sanitary control.

"When such laws are enacted for any municipality as will make it an offense punishable by fine or imprisonment to bring milk into the city that has not had the seal of sanitary approval set on it, and everything with which it comes in contact, our children and ourselves will no more be exposed to the dangers that arise from dirty, disease-bearing milk."

The Doctor's Waiting Room.—We are pained to have come upon some unmistakably flippant observations in so sober a journal as the *New York Evening Post*. "Why," it is asked, in the hope that some great psychologist may elucidate a problem which has puzzled the masses, "why must the waiting-room of a doctor or a dentist always be a plain, ill-furnished room? Why must it always contain magazines from three to six months old? Why must the one gaslight, which illuminates it at nightfall, always burn dim and low, so that reading is made possible only at the risk of one's eyesight?" The *Post* is loath to explain this practice (which it is convinced is universal), either by insinuating that these professional men never read themselves, and therefore, fail to perceive the connection between literature and illumination, or that they desire to prepare their patients for the terrors in store by making them just as uncomfortable as possible before the ordeal began. To a stupid layman, the opposite policy would seem to be advisable. The latest magazines, the newest and jolliest books, in pleasant rooms, with charming furniture and fittings, ought to be an extremely good investment, purely from the financial point of view. "But, we forget" (and here we discern in the *Post* the flippancy which gives us grief); "doctors and dentists are above that sort of thing. It is the sufferings of humanity which alone appeal to them."

We beg now to enlighten the *Post* concerning this important matter; and that without recourse to psychology. And first we would refer to a description in Dickens of the waiting-room of a member of another learned profession—the law. You went down a few steps, generally stumbling the first time, walked along a gloomy passage, and were shown into a dingy, "plain, ill-furnished," badly-lighted room, in which there were not even magazines to read. (For this was in that happy, golden age, when the modern magazine had not yet been inflicted upon an inoffending public.) In this ante-room (like unto the one so veraciously noted by the *Post*) you waited until the great man would see you; and while you waited you "meditated upon a misspent career." This was good for you; it is good for any man, even more so to-day, we imagine, than it was in Dickens' time. The doctor, we would remind our flippant cotemporary, has from time immemorial combined with his healing art the kindly function of a moral preceptor; in olden time he was both physician and sacerdos. And there is no reason why to-day he should relinquish entirely the latter office. That is why the physician's waiting-room should resemble a cloister, where the patient may think hard and determine that the indiscretion, which brought him into the doctor's clut— we mean within the doctor's sphere of influence— should never recur.

As to magazines—we are inclined to apply to them, with much better reason, the observation of Dr. Oliver Wendell Holmes concerning drugs, that it were perhaps best for humankind (though unfortunate for the fishes) if they were one and all thrown into the sea. We find not only the reading but also the advertising pages of the modern magazine replete with pernicious articles, advice and counsel how to get healthy and keep so without recourse to the Faculty. This is not good for such people. (Our observation is purely altruistic, as our quotation from the *Post* justifies us in stating.) Let both patient and public eschew magazines and confine themselves to good literature—Shakespeare, the addresses of Dr. Osler and the *Evening Post*. However, if magazines must be read, why shouldn't they be old? It is good to "love everything that's old": old friends, old times, old manners, old books, old wines; "and why not old magazines?" We too readily forget the past; the perusal of ancient history is very emollient in these strenuous days. And "jolly" literature should have no place in a doctor's waiting-room. Such is conducive to health which the patient should acquire, not in the waiting-room, but in the office, where a fee can be properly adjusted. And conversely, any patient who will read by the light of a single gas jet burning "dim and low," will sooner or later require the services of an ophthalmologist. Here are evidences of the business instinct for which the medical profession is so justly celebrated.

With regard to dentists the pre-consultation environment certified by our cotemporary (which is committed "to the diffusion of correct information") is especially appropriate. Here the patient with the aching molar may study how best to convince the dentist that he is not a foreign prince in disguise, and failing in this, how best to mortgage his estates so as to meet the accounting which will be forthcoming.

Musical heart murmurs are described by M. Landelfi (*La Ref. Med.*, Sept. 30, '05), who makes analyses acording to site, time or heart cycle, etc. These murmurs are usually heard over the valvular areas, are prolonged and musical, like small ronchi that are heard in the small bronchioles of the lungs. Capozzi observed them in five cases, two of mitral insufficiency. In Landeefi's case, which came to autopsy, there was tuberculosis of the lungs, anæmia, and galop-rhythm of the heart, with a musical murmur localized at the apex and not radiating. The murmur was not constant. The patient died without uremic symptoms. No valvular perforations were discovered; but there was chronic pericorditis, with concentric hypertrophy of the left ventricle. The left auriculoventricular orifice was normal and the whole valvular mechanism was sufficient. Probably, however, there was relative insufficiency; here Landelfi discerns a prognostic value, indicating that the heart was unable to carry on its work any longer. He believes that these murmurs are generally due to valvular insufficiency, but are not of diagnostic value.

Public medical lectures are being given by the New York Academy of Medicine with the purpose of interpreting to the laity the medical point of view as regards the many subjects in which medicine comes in contact with the public. It is intended to present such subjects as patent and proprietary medicines, pure drugs, pure food, tuberculosis, education and training of nurses, vivisection and immunity. The initial lecture was given by Health Commissioner Darlington on the work of the commissions appointed to study pneumonia and meningitis.

MISCELLANY

The Medical Union, so long desired, of the Medical Society of the State of New York, and of the State Medical Association, is now established by a court order. For three years a conference committee from both societies have worked toward this end.

Before introtroducing a filiform, olive oil should be injected into the urethra (Brinton). The penis should be drawn tense and the instrument passed with a rotary motion. If one will not pass, others must be inserted until half a dozen are introduced and the orifice found.

Ninety crematories are in operation in Europe and America, states a recent report of the French Society for the Encouragement of Cremation, and thus far 125,000 bodies have been incinerated in these institutions. This method of disposing of the dead is becoming very popular in South America.

Kernig's Sign.—When the thigh is flexed at right angles to the abdomen, the leg can be extended upon the thigh nearly in a straight line (Osler). In cases of meningitis this sign may be elicited; it is here due to strong contracture of the flexors, which prevent the full extension of the leg on the thigh.

The form and substance of a skeleton was recently seen to be projected upon the shade of a lighted room in a London house. This gruesome spectacle excited fear and indignation, until it was learned that a lacture on first aid to the injured was in progress, the skeleton having been used as a model.

Inflammations of the pleura, states *The International Journal of Surgery,* are so often of tuberculous origin that it is well to treat all these cases as if they were actually tuberculosis. Hence, after operations upon the pleural cavity an antituberculous plan of treatment should be pursued and the patient kept under observation for some time.

Physicians' Business Methods.—The *Northwestern Lancet* declares that if the physician would conduct his business on a legitimate foundation, and adhered to it by pushing methods, he would be able to reject commissions from druggists, could pay his bills like a gentleman, care better for his family and himself, and gain the respect of the community. Then his word in municipal and legislative worlds would be followed and appreciated.

An oxygen hospital was recently opened in London. On this occasion the wards were inspected by the visitors who saw consumptive patients in glass-enclosed cubicles, into which purified and oxygenated air is driven by an electric fan. A gratifying feature of the inspection, states *The Hospital Gazette,* was the presence of many patients who had been cured at the hospital and came to give a practical proof of the merits of its treatment of ulcers, wounds, lupus and consumption.

Ammonium bromide, declares Charteris (*Therap. Gaz.,* Nov. 15, '05), is more toxic than the sodium salt. With large doses the predominating action is due to the ammonium, whether the drug be given by the mouth or beneath the skin or by intravenous injection. Large doses may cause convulsions and death from respiratory failure. This drug seems to cause a marked rise of pressure with slowing of the rate and a more powerful beat. With repeated nontoxic doses a bromide action may be produced.

The Yerkes hospital foundation of six million of dollars was established by the late Charles Tyson Yerkes. A great hospital will be built in the Bronx Borough out of this benefaction. This part of the metropolis, situated as it is above the Harlem River, is become a city in itself—and one indeed of no mean proportions. There have heretofore been in this region no hospital accommodations proportionate to its growth and development; the need will, however, now be magnificently supplied by this bequest.

For the Menopause the plan of treatment should aim to sustain the organism by means of the alleviation of nervous irritability and by supplying sufficient stimulus and nourishment to keep the patient as nearly as possible at the normal standard of health, states Upshur (*N. Y. Med. Jour.,* Sept. 23, '05). Drugs (especially narcotics and alcohol) should be avoided where simpler and less active agents will accomplish the same ends. Hygienic regulations of all the functions and habits (especially sleep) should be attended to.

The secret of longevity, according to Prof. Goldmin Smith, is to live absteminously and in moderation—otherwise living pretty much as one likes. In his youth in England, he lived a very active life, following the hounds and mountain-climbing in the Switzerland having been his favorite recreations. Mark Twain has recently on the occasion of his seventieth birthday given some valuable advice to the same end: Not to smoke more than one cigar at a time; not to sit up after everyone else has gone to bed, so that there is no one left to chat with; and the like. As the revered and genially wise Mark astutely observed, one man's rules for attaining longevity might not be applicable in the case of others, and should not be too slavishly followed.

Physicians' Fees should be regulated upon the basis that the physician should have an estimate of the value of his services, operative or otherwise, fixed in his mind, declares Dr. John B. Roberts. The amount should be based upon his experience and skill—not so low as to coax away unjustly the patients of one's younger and less experienced colleagues. The fee should be lessened when the financial position of the patient would make its payment a serious burden. A well-to-do patient should pay the full fee, which should be generous in order to recompense the physician for his expensive education and hazardous life. But this fee should not be increased because the patient may be a very wealthy person, unless an unusual time is given to the service or an additional responsibility is placed on the physician by reason of the man's position.

The American Tuberculosis Exhibition in the city of New York was held at the Museum of Natural History, during the fortnight ending December 10, 1905. It was organized under the auspices of the National Association for the Study and Prevention of Tuberculosis, under the Presidency of Dr. Biggs, and the Committee of the Charity Organization Society of New York City, which is devoted to this work. The exhibition was planned as an educational measure; and in this regard must certainly have borne much fruit. Models, photographs, charts, diagrams and the like from all parts of this country, from Canada and from Europe were presented; and by this means, the essential facts, both scientific and sociological, concerning tuberculosis, were set forth. A number of lectures were given by Commissioner Darlington and others.

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NOTE.—Dr. R. is a well-known physician and surgeon of Riverside, California.

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SELECTIONS

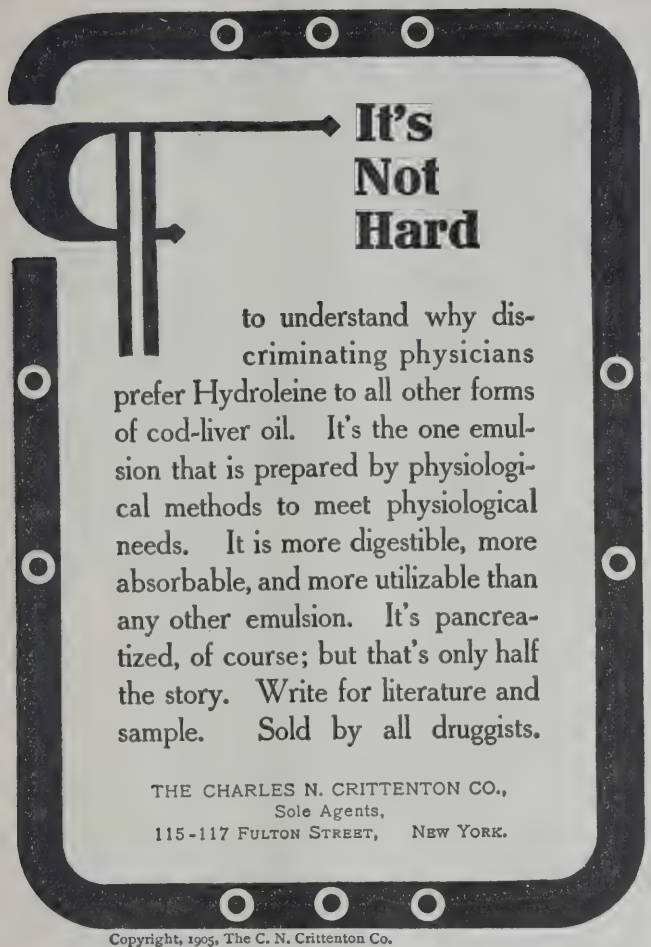
Tinnitus aurium, present only in the recumbent posture, is suggestive of aneurism of one of the posterior cerebral vessels.

D. Appleton and Company will publish at short intervals a translation of "Die Deutsche Klinik," a publication which is being brought out in parts in the German language. The articles upon the various diseases have been written by the most eminent men in Germany. Professors Leyden and Klemperer are the editors of the German work, and the articles are written by such well-known authorities as Leube, Ewald, Boas, Baginsky, Liebermeister, Eichhorst, Strümpell, Curschmann, Jürgensen, Ehrlich, Grawitz, Binz, Nothnagel, Gerhardt, Loeffler, Senator, Krafft-Ebing, Hoffa, Ortner, Kaposi, and many others whose names are as familiar as the above mentioned. It is the plan to publish this work in several volumes, the entire work to be translated and edited under the general supervision of Dr. Julius L. Salinger, of Philadelphia, Pa. Each volume in the series will, in addition, be edited by a specialist.

The Committee on the Prevention of Tuberculosis of the Charity Organization Society calls to the attention of the medical profession of the City of New York the consequences arising from the practice of sending poor consumptives to such States as Arizona, Colorado and California. Extensive experience has taught us, they say, that, difficult as it may be for a poor man to recover from tuberculosis in this city, he is better off here among his friends and relatives, where there are more adequate hospitals and dispensary facilities, than he is far from home, where he is thrown entirely upon his own resources and where the great number of consumptives willing to work at the lowest wages make the finding of employment, especially of suitable employment, almost impossible. Favorable results from climate can hardly be looked for unless at least $10 per week can be spent for board and lodging. The stranger, who has spent a large part of his savings on railroad fare, soon finds himself without work, living in the poorest rooms, eating the scantiest and cheapest food. The practice of advising the removal to other climates thus defeats its own aims and casts upon the charity of other communities a burden which they should not and cannot sustain. The committee invites the co-operation of the medical profession, therefore, in preventing persons suffering from tuberculosis from being sent to other States unless: (a) They are physically able to work and have secured in advance a definite assurance of the opportunity to perform work of a proper character at wages sufficient for their suitable support, or (b) unless they have at their disposal at least $250 in addition to railroad fare.

The National Association for the Study and Prevention of Tuberculosis. Announcement is made by the Board of Directors of the National Association for the Study and Prevention of Tuberculosis of the preliminary arrangements for the second annual meeting of the association, which will be held in Washington, May 17, 18 and 19, 1906. Two new sections have been established—one on surgical tuberculosis and the other on tuberculosis in children.

The "Bloodless Phlebotomist" for January contains the following important original papers: "Appendicitis as an Infective Inflammation," by Prof. Robert T. Morris, A.M., M.D., of New York; "The Early Diagnosis of Pulmonary Tuberculosis," by H. Edwin Lewis, M.D., of New York; "Phagedenic Ulcer," by J. Bonnefin, M.R.C.S., of Leytonstone, England. A copy will be sent free to any reader of the TIMES upon application to the publisher, 57 Laight street, New York.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SELECTIONS

A New Principle of Ergot. E. Vahlen has succeeded in isolating from ergot an active principle which he reports stimulates the contractions of the uterus and is soluble in water, but does not cause convulsions or gangrene. This substance, termed clavin, is probably a chemical entity, since it forms characteristic crystals if an aqueous solution is allowed to evaporate. It is free from all poisonous properties and may also be injected subcutaneously without causing irritation. A solution should always be prepared shortly before use, since it will not keep long. Tablets are now on the market, both for subcutaneous and internal use. The former contain 0.02 Gm. (1-3 grn.) of clavin and 0.08 Gm. (1 1-3 grn.) of salt, and are to be dissolved in 1 Cc. (15 min.) of water.—*Deut. Med. Woch.,* 1905, No. 32.

Perhydrol. Magnesium perhydrol is a new preparation, consisting of 15 per cent. magnesium peroxide, which is recommended in the treatment of gout and other forms of the uric-acid diathesis. Jaeger has found it of service in the treatment of uric-acid tophæ, and has used it in the following prescription: Magnesium perhydrol (Merck) 100 (3¼ oz.), sacchar. lact., ad 500 (1 lb.). One teaspoonful in milk three times daily.—*Aerztl Mitteilung,* 1905, No. 36.

Thiosinamine in the Treatment of Urethral Strictures. E. Remete (Centralb. für die Harn und Sexualorgane, 1905) employed thiosinamine in twenty cases of urethral stricture of various calibre. He injected 15 grn. of a 15-per-cent. alcoholic solution between the skin and the muscles of the back twice weekly; the pain of the injection was combated with cocaine injections. In the majority of the cases the method produced a decidedly favorable result, and one which could easily be noted. He did not get, nor did he expect to have, an agent which, without other assistance, would dilate the stricture, but he did get a remedy which softened the stricture so much that gradual dilation was made much easier and cured the patient much quicker. The best results were obtained in strictures of medium calibre. He explains the action by considering that thiosinamine so improved the heart action as to give the vessels of the scar tissue a better blood supply and thus a tendency to soften.—*Amer. Med.*

Skin and Genito-Urinary Affections Treated with Perhydrol. W. Scholtz, working in the University Polyclinic for Skin Diseases at Königsberg, has been using perhydrol, a new preparation of hydrogen peroxide, in the treatment of skin diseases and in affections of the genito-urinary tract. For the past two years he has employed it with good results in the treatment of ulcerating and gangrenous processes of the skin, where its chief action is due to its antiseptic properties as well as to its ability as a cleansing agent. He has found that a solution of 1:2 or 1:3 of perhydrol in water is the best solution for cleansing these gangrenous ulcers. If it is desired that a permanent dressing be placed over them, then the solution used should be much weaker, 1:50 or 1:100. This weak solution is also advisable when applied to the nose, to the genitals, or to the anus.

Basedow's Disease Treated with Antithyroidin. In view of the many favorable results reported, there can be no longer any doubt that antithyroidin, first recommended by Moebius, is of real value in Basedow's disease, and may even cure certain favorable cases. A. Alexander relates in detail the history of several cases relieved by him with the aid of this drug. The most evident objective symptom of improvement is gain in weight, but the nervous and cardiac signs, the exophthalmos, and the thyroid tumor were also affected favorably. Large doses should be given carefully, since a condition suggesting myxedema may result.—Muench. med. Woch., 1905, No. 29.

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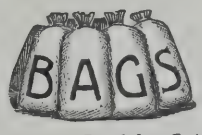

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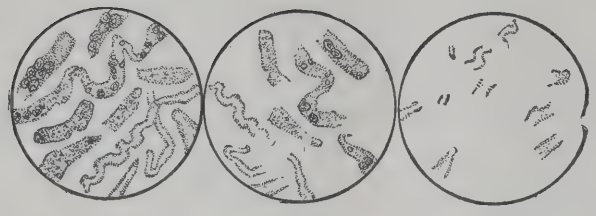

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SELECTIONS

Dr. Smith Ely Jelliffe, for many years the accomplished editor of the Medical News, has become one of the Editor's of the New York Medical Journal, incorporating the Philadelphia Medical Journal and The Medical News. We congratulate the management, the readers of this journal and Dr. Jelliffee upon this union. The Journal has added an advisory editorial staff of some of the most eminent men in the profession. The initial number under the new regime, is not only large in volume, but teems with excellent matter, as usual.

The Antikammia Company, of St. Louis, is sending a most attractive calendar for 1906. Our readers can obtain one free by mentioning this Journal.

The Arlington Chemical Co., Yonkers, N.Y , are sending a good reproduction of "Dr. Tulpius' Lesson on Anatomy, by Rembrandt, 1632." A free copy will be sent on request of any reader of The Times.

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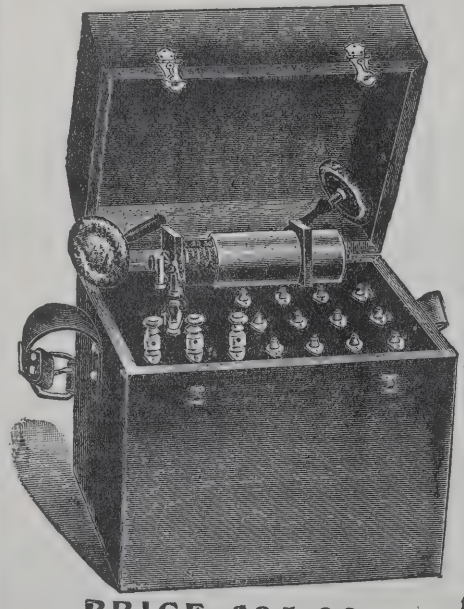

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SELECTIONS

The Post-Graduate Hospital, of this city, has issued a beautifully illustrated report of its doings for 1905. It shows that more than 70 per cent. of the 3,579 treated, were absolutely free patients. This hospital differs from many others of the same general character in being an integral part of a Medical College. Its primary object is to cure and care for the patients who are received, but during this process, practitioners of medicine are taught the latest and most efficacious means of treatment of which they may avail themselves on their return to their own practice. The methods of the wards are made use of by them in the care of their own patients and they return to their work very much better able to accomplish good results than before their new knowledge was acquired. No one is taken care of who is able to pay even moderate fees to a physician outside. The work is largely among the respectable poor, who while able to pay a small sum for medicines and dressings cannot possibly afford to pay for the continued attendance of a physician. The most scrupulous examinations are made through intelligent attendants, to determine whether the out-door patients are proper subjects for charity. Ninety general practitioners and specialists from all parts of the United States and many foreign countries received practical instruction during the last year in exact laboratory methods of investigation and diagnosis, and the knowledge thus acquired will be applied by them to the improvement of the health of the communities in which they practice. The President, Dr. St. John Roosa, and his colaborers are to be congratulated upon the splendid work they are doing.

Involuntary urination very often means a distended bladder, and in old men it should at once indicate an examination into the condition of the prostate. Vomiting, too, is often caused by distention of the bladder.

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A fracture produced by only slight violence (*Am. Jour. of Surg.*) should at once raise the suspicion of a malignant growth. In such a case a uniform dark shadow about the bone as seen in the fluoroscope is to be interpreted as a neoplasm rather than as callus, for recent callus is not opaque to the X-rays.

In the presence of anemia or of faintness, without other apparent cause, inquire concerning the passage of black stools. The condition may result from hemorrhages due to an ulcer or neoplasm of the small intestine.

After circumcision it is important to prevent adhesion of the reflected mucous fold of the prepuce to the corona glandis by the daily passage of a probe about the corona, and by the use of vaseline.

An amputation for malignant ulceration should not be performed until the possibility of its being merely a broken-down gumma has been satisfactorily excluded.

Inflamed areas and abscesses about the knees of creeping infants should be examined for foreign bodies.

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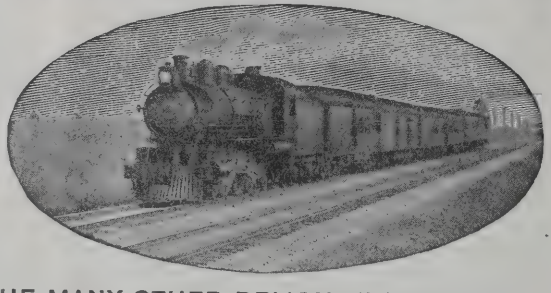

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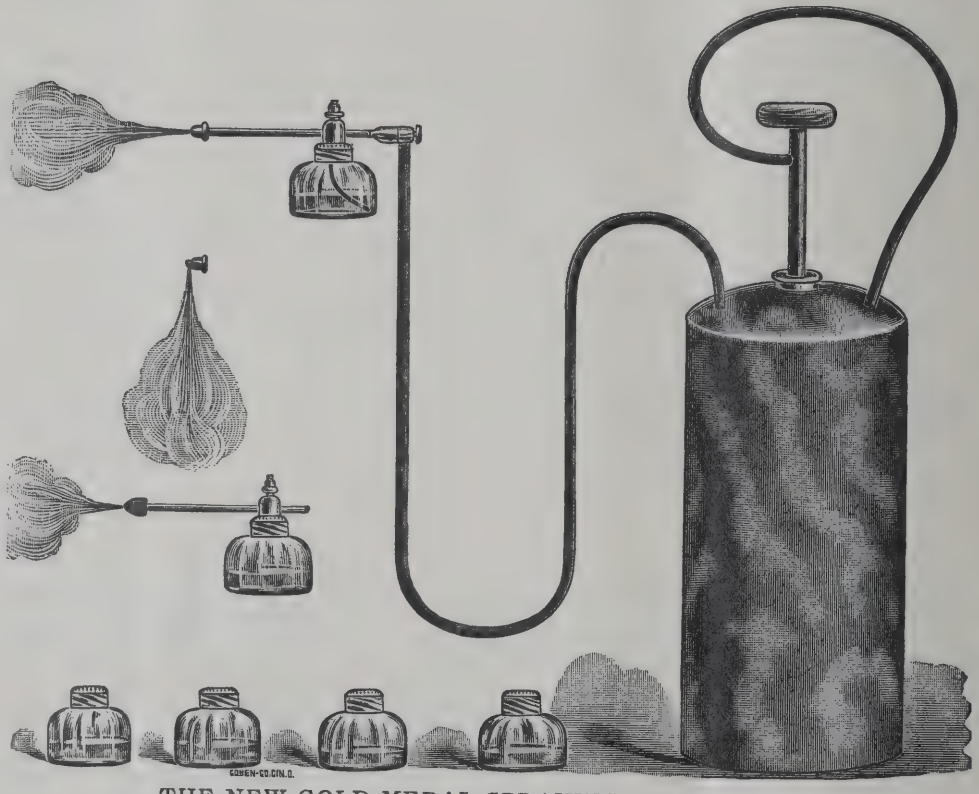

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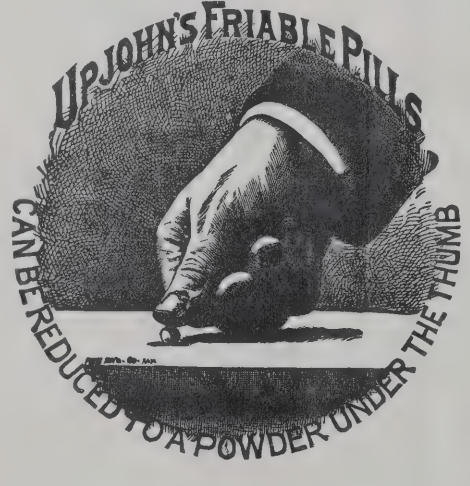

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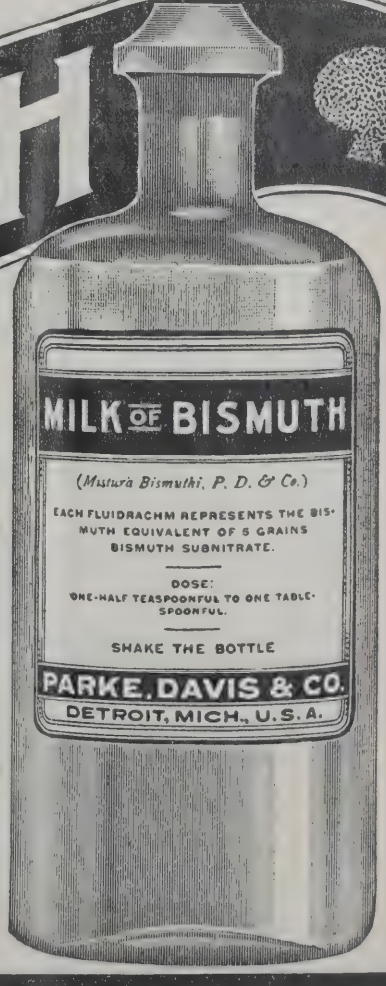
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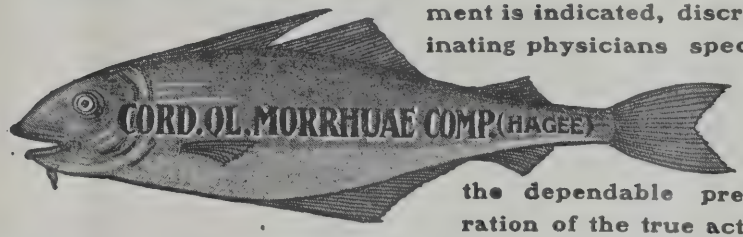

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SELECTIONS

Scrofulous Eczema Treated with Iodipin. Thaddäus Weclewski points out that one of the most difficult problems that confront the physician is the successful treatment of chronic scrofulous eczema. The fact that so many remedies are constantly being recommended is sufficient proof that the majority do not bring about the desired result. He reports a series of cases in which iodipin was used with marked improvement in a very short time. Most infants do not object to the taste of the drug, but some care is necessary in infantile cases to avoid iodism. Some adults object to the oily character of iodipin, but here injections may be given (or it may be administered in emulsion).

Intraocular Hemorrhage Treated with Dionin. Dionin is gaining wider and wider recognition as an extremely valuable agent in a large number of external and internal diseases of the eye, says John Green, Jr. In subconjunctival injection it was found by Blanco (*Arch. de Oph.*) to cause resorption of a severe intraocular hemorrhage, with restoration of vision to normal.—*Interstate Med. Jour.*, Jan., 1906.

Dr. Gould's Medical Dictionaries, sold by P. Blakiston, Son & Co., during 1905, amount to 17,084 copies, bringing the grand total to 198,257. This sale shows the intrinsic merit in the books.

Since M. Mariani first adopted Coca to the exigencies of daily life, when nearly half a century ago he introduced Vin Mariani to the medical profession, it has been his pride to maintain its high standard as it was then presented and accepted by physicians everywhere. So positive was this recognition that endorsements have been showered upon Vin Mariani as a tonic-wine of unfailing excellence. Such testimonials have been appreciated because they were unsolicited expressions of gratification. It is proposed to jealously guard and to perpetuate this distinctive standing.

"A Conspiracy to Establish a Physicians' Trust." We have received a reprint from "The National Druggist" of St. Louis, entitled "The Legislative Schemes of the American Medical Association," with a request for publication. The article is too long for this purpose, but if any of our readers are desirous of perusing this article, they can obtain a copy from the publisher, as above.

"About Every Prominent Man Seized with Pneumonia, Dies"—so observes Abbott, in a terse and pointed brief on the Treatment of Pneumonia in Clinical Medicine for March. The rest is so frank and full of truth that we quote a part verbatim: "We mentally prepared Field's obituary the moment we heard he had a 'slight cold.' Wheeler's death was even surer. Given, a prominent man with pneumonia, a group of 'eminent physicians' in attendance, each afraid to suggest any active therapeutic measure as the rest are sure to land on him with both feet, with a daily bulletin as the last straw, and the result is inevitable. Conscious that the eyes of the entire community are on them, they have more than one-half their attention fixed on the 'grand stand,' and the opportunities for effective intervention are unrecognized or unimproved; while the multiplicity of counsel renders the following of a consistent plan of treatment impossible."

A condition sometimes simulating inguinal hernia (Int. Jour. of Surg.) is the protrusion of masses of fat through the canal in front of the peritoneum. If this fat be later absorbed a true hernia may result, owing to the dilated condition of the canal which remains.

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In the April number of the American Journal of Clinical Medicine, Prof. Salisbury contributes a suggestive paper dealing with the mutual assumption that absorption from the stomach is universal and speedy. In dogs, and probably in man, iodides are not so absorbed; strychnine is not absorbed from the stomach of the rabbit, but is from that of the dog, and probably from that of man. Inouye found that neither atrophine nor rhubarb were absorbed from the human stomach. Inorganic salts are slightly, if at all, taken up from this organ. Altogether, the uncertainty of this organ is great. The intestines offer more favorable conditions, and if the stomach is empty when the medicine is taken, and the motor power good, the dose may be forwarded into the duodenum and be absorbed thence in about a quarter hour; but if the food is present, it must wait the conclusion of digestion. Alcohol facilitates absorption. Great dilution hinders quick action. Carbohydrates leave the stomach more quickly than peptones—syrup is a better vehicle than milk for speedy action. Iodides are decomposed by hydrochloric acid present in the digestive epoch, unless alkalies be given at the same time.

Merck's Merits in the Manufacture of Morphine

THE work of Seguin (1804), of Serturner (1805), of Dumas and Pelletier (1823) was scientific to the highest degree. For the sake of knowledge they investigated perseveringly until MORPHINE was thoroughly defined.

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Prepared only by

Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France)

57-59 Prince Street, NEW YORK.

SELECTIONS

The Gardens of that delightful artists' and writers' colony, Cornish, N. H., will be fully described in the May *Century*, a "garden number," by Francis Duncan, the author of "Mary's Garden and How It Grew." Cornish is that idyllic town among the New Hampshire hills where Augustus Saint-Gaudens, Stephen and Maxfield Parrish, Herbert Adams, Charles A. Platt, the Dewings, the Fullers, the Shinns, Norman Hapgood and other kindred spirits live and garden. Here then, naturally, the gardens are all that gardens should be; and their description, by so competent an authority, will be of unique interest. Among the many illustrations enriching the text, will be a full page, in tint, showing a path in Stephen Parrish's garden.

J. Davidson Lewis, of St. Paul, reports that from his large and varied experience with cypridol injections, that he found eight minims practically without effect, and now uses not less than 30 minims (2 cubic centimeters) and even as high as 40 minims, three times a week; that he has used such large intramuscular injections unremittingly for a year and has never observed any untoward symptoms as a result. The solution of biniodide of mercury in oil seems not only to modify its irritating properties, but also to remove the danger of salivation, formation of painful nodules or other untoward effects, which most intramuscular injections are liable to produce, while the specific action of the mercury is exhibited at its best.

Sevetol (Emul. Sevi Comp.—Wyeth) is a natural emulsion of mixed fats with proteids and carbohydrates. The combined fats, consisting of butter fat, beef fat, olive oil, lard and peanut oil, constitute thirty-three per cent. of the whole mixture. This preparation presents the most nutritious and vital substances in a form requiring the expenditure of very little energy on the part of the system to insure rapid absorption and assimilation. It provides the elements necessary for the reconstruction of wasted tissues and also supplies an available source of heat and energy.

The host of friends of Gray's Anatomy, says Dr. J. P. Tunis in a critical review, will cordially welcome this new American edition, thoroughly revised and brought up to date. In the selection of Dr. John Chalmers Da Costa as Editor the publishers have secured a man who is not only widely known as an anatomist and a surgeon but also as a teacher. No better combination of qualifications could be found to ensure the proper treatment of this most important work. Dealing, as it does, with one of the few branches of medicine which may be strictly regarded as an exact science, no book is better planned to give as much knowledge of human anatomy in a given time. No book is more valuable at the dissecting table as "guide, philosopher, and friend," and no book could give a clearer résumé of each subject. The great popularity of Gray's Anatomy in the past fifty years, especially among medical students, is sufficient proof of its real and lasting worth. It has stood the test better than any of its numerous rivals which have, during that period, appeared in the field against it.

Pankreon (Tannin-Pancreatin Compound) is a dry, grayish, odorless powder, of a slightly acidulous taste, obtained by the action of tannin on the pancreatic substance. It is unalterable in the gastric juices, its action being developed rapidly in the alkaline intestinal fluids. It is a strong tryptolytic, amylolytic, and emulsifant. Good results are reported from its use in diarrheas, dysentery, marasmus, membranous and catarrhal colitis, achylia, nervous dyspepsia, gastritis, hyperemesis, jaundice, and in the digestive disorders accompanying carcinoma of the esophagus and stomach, and strictures of the intestines.

The United States Civil Service Commission, Washington, D. C., announces an examination on June 6-7, to secure eligibles from which to make certification to fill at least two vacancies, at $600 per annum each, with maintenance, in the position of medical interne, Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in any branch of the service requiring similar qualifications. For particulars address as above.

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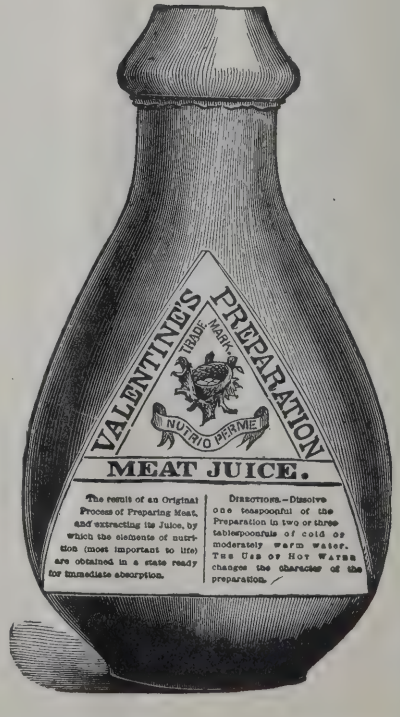
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DIRECTIONS.—Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or moderately warm water. THE USE OF HOT WATER changes the character of the preparation.

"THE GREAT WHITE PLAGUE."

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

GREAT actresses have great hearts. They love humanity as sincerely as they love their histrionic art. We learn from the public press that it is the purpose of Olga Nethersole to quit the stage in eight years and devote the remainder of her life to fighting tuberculosis. She says: "Since I was a small child I have known Sir Alfred Fripp, surgeon to King Edward. It was through him and a dear friend of mine, who was afflicted with tuberculosis, but was finally saved, that I took such a deep interest in the work. I have my own hospital in London. Many other hospitals in the country are bending their best work in this direction. Yet they will be powerless to prevent the constant spread of the disease unless the people themselves are awakened. This is my work."

The most eminent tragedian of his day, Edwin Forrest, had a big heart that prompted him to build and provide for a suitable home, located in country air outside of Philadelphia, for invalid and broken-down actors and actresses of prominent note and worthiness. A number of the most famous dramatic artists who have graced the American stage in former years have spent their fading hours in the refuge of the Edwin Forrest Home. Forrest remembered the aged and unfortunate of his professional craft. Nethersole opens her responsive heart to the greater work of trying to help redeem the afflicted world from the scourge of consumption.

It is no longer the province of medicine to administer drastic pukes and purges for ailing humanity—to prescribe dulling dopes and patent deceits that could only decoy and betray the struggling and vanishing chances of life. Eminent minds are getting down to analytic study of the befouling dust and smoke of the battle-field that excoriates and strangles the lung power of the wounded before the salvation of nature can effect the rescue. London is particularly a smitten city. London breathing air and tenant houses are perjured with the toxic elements of physical perdition. Most of our American towns and cities are in the grasp of similar condemnation. Our people are belted to toil where the machinations of enterprising money makers have constructed vast arenas of business progress that heedlessly barred out nature's merciful envoys of health and vitality—so we also have builded a nation of consumptives. But we now glance again at Nethersole's mission in smudge-and-fog-bound London. The fog-air of London, as in any other considerable city, is disastrous to the health of the lungs because it holds in condensed presence to earth and therefore to street and house air all the combustion or fuel gases and smoke and sewer feculence produced in said city, and a measure of which must be inhaled with every breath. It is computed that London embraces about twice as many houses, manufacturing plants, and similar consumers of carbonaceous fuels as Philadelphia. Besides locomotives, stationary engine houses, et cetera, on a cold day these London houses consume forty thousand tons of coal. The thriftier working classes in American cities burn a larger proportion of fuels ordinarily than do London working classes, where three families out of five are said to earn but three shillings a day. It is estimated that from every forty thousand tons of coal consumed in the houses of London (American cities ditto) on a cold day there is emitted four hundred and eighty tons of sulphur in sulphur gas. In absence of late statistics, in gone-by days six million tons of coal were required to produce the gas used in lighting London each year. Other modes of the consumption of fuels are not specified in my reference, but the weight of the smoke cloud overhanging London was computed at fifty tons of solid carbon, and two hundred and fifty tons of hydro-carbon and carbonic acid gases for each day.

If we will expand our reasoning, we will easily comprehend that an uncomputed proportion of these lung-destroying poisons was emitted into the breathing air of the inhabited houses, shops, factories before drifting into the outdoor air for general distribution. In Philadelphia there are two hundred and fifty thousand houses, to say nothing of smith shops and manufacturing works in great profusion, where there is a tremendous consumption of fuels. The amount of fuel gases produced daily in a great manufacturing city is not readily computed. It would have to be first ascertained how many thousands tons of coal, coke, coal oil, benzine, wood, illuminating gas were burned in dwellings, business places, factories, iron works, locomotives, and at unnumbered avocations, and from the bulk of combustibles burned compute the bulk of toxic carbonic oxide gases produced and thrown off into the immediate air to confront the lungs of humanity of all ages. I am here bending my attention to the original persistent devitalizing blight to the lungs of population independent of harboring a stray bacillus by accident and all belief that the hapless microbe must be the starter of tuberculosis degeneration of the abused lungs themselves or other organs. Madam Nethersole may establish a dozen hospitals for convenient resort and care of victims of consumption; for the help of initial cases taken from the haunts of unsanitary and overcrowded rooms; but never for the effected cure of tuberculosis in the smitten air of London. The breath in her hospitals, as in our American city hospitals for invalids, is pregnant with the corrosives evolved from the various fuel combustibles in continuous use by the dense city. Unless hospitals for the relief of consumption are located amid clean air with its refreshing ozone uncontaminated outside of city limits, one may preach himself blue and bolster his faith with moonshine dreams, but he will not see real cases cured, because there is no release of the lung functions and lung tissues and circulating blood cells from a continuous repressive blight in the common breathing air—most probably covered from recognition by the "smell" of carbolic acid or other malodorous blankets to the senses.

Let us for a few minutes get down to the actual situation. The combustion of a ton of coal requires five hundred and thirty-seven thousand and six hundred cubic feet of air—and thereby produces nearly three tons of carbonic oxide gases. Wood, though consuming less air in burning, while burning throws off a corresponding volume of poisonous carbonic oxides, the same as do coal, coke, and charcoal. Illuminating gas and kerosene when burned in the breathing air of rooms consume largely the oxygen of each room air and meanwhile emit toxic smoke and gases right there and then when closed from the outdoor air. The emitted smoke and gases are accumulatively oppressive and depressive to the organs of respiration first—then to the entire organism. Add to this corrosive tracheal and lung

wear the admitted effluvia from near-by privies, from sewage, uncanny housekeeping, musty carpet dust, from the physical débris of re-breathed air besides the lung grind incident to unsanitary shop and business life—how are these abused lungs to escape physical breakdown by the thousands—wherein the tuberculous waste of which we meet the scavenger bacillus ferment which subjectively has been so falsely blamed for the whole bad business because found on the scene of physical destruction. Now, then, a hospital located amid a naturally devitalizing atmosphere makes little more than a stage bluff at curing consumption if once confirmed in its wear and waste of perverted nutrition. Release of the lungs, and consequently of the blood and its functions, from these invidious breathing-air depressants, has laterly been made the special sanitary objects of what is now known as the open air treatment for consumptives in all varieties of weather and rigidities of temperature—in too many cases too late adopted and rather over-strenuously conducted for permanent success. The anchor of cure is liable to early break, unless the patient can avoid relapse by persistently remaining away from the snares of close and heated rooms and demoralized air.

At present there is rising an enthusiastic and promising boom by special promoters of the outdoor fresh air treatment, pushed to seasoning tests of winter severity, braving cold and storm the same as basking in sunshine hours with Laplander sturdiness for the healing luxury of inhaling the sweet ozone of pure air. Certain subjects who possess sufficient vital store to build with bear the test of exposure with decided benefit, while the thin and bloodless are shriveled to rapid exhaustion. A lady told me yesterday that her consumpted husband had made a trial of the White Haven treatment, but so rapidly became worse that he could not stand it, and was compelled to return to the comforts of his home, where he now thinks that he is getting well —a hope she knows will never be realized.

England has been rousing attention to the superior importance of sanitary air breathing for arrest of consumption and prevention of tuberculosis. Since the tuberculin flummery of the Koch and Behring "antidote" has been decently combed out, the pathology of consumption has been revised. It is at last dawning on the laggard apprehension of men who thought they were lung specialists that lung work of every individual with every breath deals directly and subjectively with the quality of the breathing air that the lungs must handle; that the quality of the respired air determines the quality of the blood corpuscles, that the quality of the blood determines the quality of the nutrition and health—hence, hospitals are being established where the values of decent air for respiration are made to supersede the fallacies of drug medication in consumption. Outside the lines of our visionary "germ" faddists who are yet infatuated with the exploits of drug and serum antidotes to twiddle-dee victims through the degeneration of the great white plague, wiser and sensible minds are discerning that a previous environment, through the villainies of abusive breathing air, lays the substrata defects of outworn and wasting lungs. The advanced thought apprehends that lungs have to deal with aeration and the competent repair of the blood for healthful nutrition—instead of battling with the blanch of pungent carbolic acid, or chloride of lime or formaldehyde fumigations. Are we doctors? Shall we parade with placards of falsehoods? Shall we actively compass the conditions that lead or lapse into physical conflagration, or shall we content ourselves with learnedly formulating theorems for squirting antidotes at the consuming flames after they are kindled?

Consumption does not set in as an independent disease by itself, as do measles and smallpox, for instance. Consumption is rather a sequence of various pathological antecedents. There have been repeated assaults of what are termed "colds" from lack of understanding, but usually caused by breathing air irritants. There have been catarrhs of breathing membranes; severer aggressions of influenza or of pneumonia; deflections of neuroses and nutrition; deviations from normal equilibrium and vital tone comprehensively. All these have been slavishly wrought through subjugation of the breathing channels to such deteriatives mixed with the breathing air as not only naturally induce local and systemic disabilities, but interfere also with their cure. All breathing leads directly to the lung tissues. Every respiration either supports or it discounts the perfection of lung function and lung texture—how could it be otherwise?

Two years ago we had in Philadelphia the eminent tuberculosis specialist, Dr. Sims Woodhead, of Cambridge University, England, who delivered an impressive illustrated lecture to a large audience of physicians and nurses. His subject was entitled "The Paths of Infection in Tuberculosis." The practical suggestiveness of such a title or text should never be turned down in the study and investigations by any one who would properly comprehend pulmonary consumption. Where do the paths start? In the breathing air environment. Where do the paths end? In the breathing air environment. What has opened the avenue to direct relief by fresh air treatment? The decent logic that inasmuch as the lungs, from birth till death, must depressively handle impure depraved air, just the same as lungs would handle refreshingly restorative or healthful air when surrounded by it, has unkeyed the stupidity of tagging tuberculosis to the destiny of heredity instead of to unsanitary family habit and habitat. For identity of living conditions or environment naturally, by the eternal laws that govern the impressibleness of flesh and blood to daily influences that effect health—naturally lead to similarity of physical results in families with which mere heredity itself has nothing to do. By demonstrating that clean air will successfully oxygenate the blood sufficiently to enable the blood and its nutrition to heal moderate sores or cavities in the lungs, and thus avert the early doom of hastened death, the superiority of fresh air, pure air, clean or decent air, naturally leads to the solution of the tuberculosis problem. Dr. Woodhull brought to us his exceptionally large investigative hospital experience. By his enlarged magic lantern exhibits to demonstrate post-morten conditions of many lungs that had in life been excavated in various parts by tuberculous waste, but had healed over by fibrous deposit that arrested the ulcerative process, thus proving, as Dr. Woodhull insisted, that a sanitary breathing air and abundant nutrition could and does arrest the destructive advancement of consumption. The learned doctor wabbled concernedly over getting around his "tubercular bacillus" postulate which his

fresh air gospel practically disarmed, but which he diplomatically failed to repudiate in presence of his Philadelphia auditors, who yet devotedly cruise under the swash-buckler idea of a pirate bacillus to scuttle the lungs to destruction! In itself the evidence deduced by this eminent English specialist, that fresh air treatment arrests consumption, knocked pat on the head his enfeebled bacillus dodge—though he did not seem to be conscious of that fact.

There is proof in antithesis. It is now amply demonstrated that sanitary quality of breathing air by its nature prevents and also arrests consumption—therefore, its opposite, or degenerate breathing air is the natural propagator of the great white plague among the people who develop that lamented malady. Relatively pure air is what is implied when we talk about "fresh air." Fresh air treatment for tuberculosis could never have won its common sense victory if a bacillus was the prime cause. If it is a bacillus that worms a lung into tuberculosis, of what account would be the air? When we reverse the rationale, instead of leaning on cod grease and smoke syrup to glide the smothered consumptive down the toboggin of suffering to the grave, it is coming to be understood that adequate oxygenation defies the evolution of microbes in the lungs or elsewhere, and welcomes the process of healthy nutrition which preserves integrity of physical organization. This orthodox code of daily hygiene faithfully recognized and honored in every household throughout infancy and childhood, youth and maturity to old age, would, in the span of about two generations, reduce the great white plague to but the exception among diseases. The tuberculosis is not—*not!*—contagious, or everybody in the land would have died of it generations ago! Fresh air treatment has cleared for its base the fact that tuberculosis is preventable. What then? What is preventable may be prevented—and what is prevented does not exist.

Let us take up a practical analysis. I am enabled to here detail the method of managing tuberculosis at the Linford Sanatorium, England, as written me by the author, Robert N. Stephens, while a patient at that institution in 1903—more than two years before his recent collapse by grippe. Linford Sanatorium is remote from the haunts of mankind, twelve miles from Bournemouth, an English watering place located on a cliff looking south over a bay on the Irish Channel and southwest from London. Linford Sanatorium is the first of its kind in the British Islands specially built for carrying out the "Nordrach" treatment for consumption. Linford is situated sufficiently far away from any inhabited town to be out of range of the injurious influences of aggregated population. It has a gravelly subsoil, a large amount of sunshine, and moderate rainfall—conditions that merit attention when locating American hospitals for tuberculosis. The Linford stands on a slope facing southeastward within a stone's throw of woods of pine and oak, sheltered on all sides by elevated moorlands of historic New Forest, and is afforded pure atmosphere and sheltered walks, which are the only climatic essentials for the treatment of tuberculosis disease.

After removal of the patient from the impure home surroundings in which tuberculosis generally develops, the treatment consists in a carefully systematized mode of life, including abundant and physiological diet as a prominent part. To this is added graduated exercise, with the right proportion of rest, both mental and physical, in the open air, not only to replace the wasting caused by the disease, but to form new tissues in order to build up again the weakened organism, to restore the failing vital energy, and to thus promote the process of repair in the lungs. The physicians live studiously in personal touch with those under their charge, and visit each one separately three times a day. The Linford has its own farm of thirty acres, where healthy cows are specially fed for the milk supply of the sanatorium. The buildings have been carefully designed to avoid formation of dust or smoke, and to cause patients whilst indoors to be practically in the open air, and at the same time to spare exertion to those in bed. Each of the patient's rooms has a hot and a cold water supply attached to the watshstand and to a douche bath. The heating is from a common centre. All bedrooms are fitted with casement windows. The lighting is electrical, the sanatorium having its own installation. My friend continues: "The features of the treatment briefly are: First, open air during every moment of existence. I sleep in a room with two great casement hinged or sliding windows wide open always, no matter how the winds blow or the rains fall. Second, abundant eating. The doctor sits at the head of the table and fills our plates, and we have to eat them clean. Third, taking walks twice a day, the destinations and distances being determined by the doctor, who is guided by our temperature, which we take four times a day, also by other conditions. Fourth, rest, physical and mental. We are not allowed to exert ourselves in the slightest or to bother about anything. We walk at a baby's pace, and during special resting hours after the walks we are not allowed to talk. It's curious that though I eat the greasiest kinds of food, I'm never sick at the stomach; and though we do our walks in cold and rain, and sit in regular gales of draughts, we never catch cold.

"Some really astonishing cures have been made here. Of course by 'cure' I mean that the bacilli have been driven out, or prevented from spreading, and the patient enabled to go on with his remaining portions of lung in good, untouched condition. But he must *always* be careful in selecting his breathing air. My cough is much easier and less frequent. I can control it, but some amount of morning coughing is necessary to clear out the lungs. All the lobes of one lung and the upper lobe of the other are touched; and then there's the fibrosis also; yet they say I'm a really hopeful case. My breathing power is slowly improving under a course of slow up hill walking, but I discover that I shall never be a great breather. My heart will accommodate itself, however, I'm told. When I leave here I'll continue the sort of life that I lead here. I thank you for your constant solicitude generally. Ever yours, R. N. S."

Mr. Stephens, more than two years prior to his decease, thus gives the world a glance at what is effected by sanitary air agency. From later correspondence it appears that the autumn weather at Linford and the nearest habitable town, Bournemouth, is rather more rude than is usual at Philadelphia during corresponding season. When we observe clinically we find that high winds alternating with fogs in built-up smoky and gassy towns and cities wear heavily against consumptives and cases of pneumonia; and these are supposed to have caused the hastened collapse of the case just cited. In

other connection my explanation has repeatedly been stated, namely, high winds whirl the smoke and gases from all chimney tops down toward the ground and, mixed with the common breathing air, renders it doubly oppressive. Said winds also press the chimney draughts backward, pushing the fire gases directly and frequently into the house air that stifles the consumptive, the case with pneumonia or with heart disease. Again, when fogs or drizzling clouds lying upon the earth prevail, all the toxic gases and smoke of fuel combustion, also the feculence from privies and sewage, are held condensed in the breathing air which cannot adequately oxygenate the blood, and the disabled lung or the heart must cease their struggle. Under the depressing conditions of respiration, every striving breath is an exhauster snuffing out the vital spark. High winds and dense fogs that occur in the colder season are doubly severe on the lungs because of the more than double proportion of fuel gases then present in the breathing air because of the extra house heating. Let me quote authentic records of deaths in Philadelphia briefly as illustration:

For one week in April, died of tuberculosis of lungs, 74; of pneumonia, 96.

For one week in May, died of tuberculosis of lungs, 49; of pneumonia, 46.

For one week in July, died of tuberculosis of lungs, 51; of pneumonia, 23.

For one week in November, died of tuberculosis of lungs, 58; of pneumonia, 37.

For one week in January, died of tuberculosis of lungs, 71; of pneumonia, 88.

For one week in March, died of tuberculosis of lungs, 87; of pneumonia, 123.

Blustery weather, blustery months, seldom agree with the sick. This does not, in my judgment, result because of mere increased activity of the atmosphere; but because of the filthy dust, the soot and fire gases whirled intemperately to and fro to earth—conditions that the lungs can illy contend with, respiratory relations that acutely irritate breathing organs, that smudge oxygenation, swamp the nervous energies and rapidly exhaust in lung diseases. What else is there to infest the air with like untoward results—always including inconsiderate closeness of rooms and the aggression of illuminants in the environment?

The planting of hospitals in city air, like the Phipps Institute in Philadelphia, for the study of consumption, while a benevolent accommodation, must always measure very short of the province of a pure air sanatorium for the cure of tuberculosis. City hospitals are temporary homes for the homeless poor, where they may either improve or die and furnish another post-mortem for demonstration; while a pure air sanatorium promises either healing or cure by fibrosis, but never a renewed lung where portions have softened to waste. It is wholly unnecessary and inconsistent to send tuberculous patients through the exhausting grind of long journeys to Denver or California. There may be equal purity of air found on any sunny slope a few miles outside the area of city air. But any spot chosen, to be consistent with remedial conditions, must be kept locally sanitary in management if the object sought shall be won. Yes, even then and there, as I have recently seen in a tuberculosis exhibition, special tents devised for fresh air treatment set up beguiling traps of defeat inconsiderately alongside the cots by stupid doctors who aim to obtain benefits never to be substantially realized because the plans cut off the most direct chances by cross purposes. Why? Because the doctors have curtailed their perceptions and remained blind to the primal fact that any toxin in the breathing air of consumptives is radically detrimental to the integrity of lung tissue, to successful nutrition and vital energy. The late tuberculosis exhibition in Philadelphia, under the auspices of the Phipps Institute for the study of tuberculosis, also its course of specialized lectures, proved a great advance for the enlightenment of thousands who visited the demonstrations by prepared specimens of post-mortem lungs. But my review of this instructive exhibition and also the White Haven Hospital on the mountain side so distant from Philadelphia will merit a separate paper.

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HYPERTROPHY OR COMPENSATION.

BY F. B. BRUBAKER, M.D., MIFFLINBURG, PA.

ALL tissues possess a formative process over or above that normally exemplified, and well it is that this is so, for recognizing the fact, as we have seen in the preceding essay, that all organic progress is dependent upon a series of atrophic degeneration, and likewise that the law being universal tends to operate at times from causes dependent upon disease principles, as in intermittent fever, endemic goitre, etc., the result of the work of micro-organisms in which compensatory hypertrophy ensues in the spleen and thyroid gland, and were it not so death must ofttimes be speedy and without warning. Indeed it is largely to this principle alone that man has been raised to the head of all organisms and thereby enjoys a certain immunity from impending peril. Were I called upon for an opinion as to the greatest factor in the onmarch of organic evolution, I would unhesitatingly pronounce it that tendency or force which protoplasm possesses to increase. We have before this time spoken of the formative process, the sum of which consists of a certain vital, plastic, or constructive force in constant operation, so that the forms assumed under its influence depend primarily and in greatest measure on the specific composition and other properties of the organizable materials taken from the blood, and that these properties transmitted in the first instance from the parent to the germ are thenceforward communicated to all the nutritive materials, subject, however, to certain progressive changes, corresponding to the development and degeneration of the several tissues. It being assumed further that the taking of materials from the blood by each part for its own maintenance, depends as to quality on certain definite relations or organic affinities between the blood and the part and as to quantity on the nutrition or waste of a part. We have seen in the preceding essay that nature has raised man to the head of all organic life by the operation of a universal law (we now speak of man protoplasmically), and that ever through the gradually ascending scale she has held this law supreme; that it operates by a series of exclusion, for when an organ or part becomes no longer useful to the general economy of the whole, it is either reabsorbed, which in the formative process very likely relates to living tissues, or is cast out, which signifies its absolute death, it being necessary to make a ditinction be-

tween parts that die and those that only degenerate, for degeneration as we have before seen is not death. Those which die are cast out entire. Those that degenerate are disintegrated or dissolved, and then absorbed. We seem to have a good example of this difference in the fangs of the two sets of teeth, for while those of the deciduous ones degenerate and are transformed so as to become soluble and be absorbed, those of what we call permanent, die and are cast out entire. Now this universal law always operates in the same manner ultimately, that is, the result obtained no matter whether direct or indirect, and no matter by what process or mode it operates, the inevitable result is that related to vascularity. In the present instance being contractive and always nutritional. We have assumed that the operation of this law being progress is, and can be, but one-half of that visible phenomena known as life, not only because things cannot exist singly, but likewise, and as is well known, were contraction all that is known and relative to vascularity, organisms and especially those of a higher warm blooded type, would speedily perish, starved as we might say by their own vessels. Again it is immediately self evident that were such a law allowed to operate in the higher animal world without a necessary governor, all phenomena would be but one sided, in fact organisms would never present to us fruition, for, if allowed to exist at all, would be dwarfed, contracted and imperfect, therefore to prevent any such disaster nature has given to all organisms and especially those of a higher animal class a directly opposite phase, viz., that of dilation or plethora, which passing over its interpretation and general operation as we find it in lower life, to man, we behold in that other great and perfectly natural phenomena, unfortunately sometimes called disease, viz., hypertrophy. Properly speaking hypertrophy is never developmental, but simply relates to growth, this being even so where it relates to numerical hypertrophy itself, and yet the law is not absolute. *The same being under all circumstances, and wherever found, compensatory.* M. Bizot and Dr. Clendenning proved of the heart and arteries that their average size regularly increases, though with a decreasing ratio of increase from childhood to old age, the weight of the heart augments, and the thickness of its walls increases. Now the reason for the same is to my mind twofold. Firstly it preserves the duality of form and function already described, and, secondly, and the thing we are in this essay particularly interested in, that because of the increasing difficulties put in the the way of the circulation by the increasing rigidity of the parts either by calcareous deposits, sclerosis, or what not, or normally by the stiffness and hardening of old age. *A normal hypertrophic safeguard compensatory.* If, therefore, I can succeed in making plain by this simple illustration the fact that not only here but throughout all the various processes and functions whereby life is maintained, there runs coincidently therewith a compensating quality or quantity, my battle will already be half won. Now this beautiful example of normal cardiac increase which is a normal and everywhere following consequence, on life principles, by which it strives to overcome, and for a long time accomplishes in overcoming, a gradually increasing mechanical constriction which corresponds to atrophy (the vascular system being simply narrowed by reason of deposits, let us suppose) is all there is in any condition whereby any organ, or part, hypertrophies.

The rule, then, concerning hypertrophy is that so long as all conditions remain the same, each part of the body after the attainment of the average size merely retains its state, or at most grows, at a certain determinate rate, but when the conditions alter so that a part is more than usually exercised in its office, it then manifests a power of renewing or accelerating its growth. Thus it is that each part has a **normal reserve** power of growth and development, which it puts forth in time of emergency, and which is always to compensate a loss existing somewhere within the body, therefore we should say that the power to increase, or the latent hypertrophic phenomena so universally present in organic tissue, is to be viewed as an ever watchful sentinel, firstly to hold in proper check atrophpic or degenerative evolution, and secondly to subserve, when one or another organ becomes incapacitated by taking its blood, enlarging developmently, and functionally, it therefore takes the office of the same and therefore prevents disaster. But hypertrophy to be properly understood must be studied. Indeed whether a tissue on the one hand atrophies, or on the other hypertrophies, ofttimes depends upon seemingly trifling circumstances, for while the establishment of the former depends in all cases upon less blood being supplied a part, and for the latter, more, yet the mode of its accomplishments is at all times the same, the only difference being how the same acts. Thus on the hand of a laborer is found a callus, the same being hypertrophic, and in all cases the result of discontinuous pressure, which is stimulating, and invites more blood to the part. The cuticle admits of being thickened in all parts of the body, and if for cuticle, then for muscle, and if for muscle then for bone, or gland, or vessel, or what not. We find a thickening of cuticle wherever there is pressure, the effect of which is to increase the cuticle to defend the cutis underneath, and yet not only the cuticle thickens but as we have said the parts underneath, whenever it becomes necessary to protect still deeper lying structures. It may therefore be stated as a general law that discontinuous pressure is stimulating, because it invites more blood to a part and consequently augments the same while continuous pressure is not so, but rather the opposite, because it shuts off the blood from the vessels and therefore tends towards atrophy. But we are not here concerned with continuous pressure, which belongs to atrophy, but with discontinuous, which is hypertrophic. But pressure in either case is but one of the various modes or conditions whereby is determined too much or too little blood to a part. Now as we have before noted in the case of the cuticle, is likewise true of all other tissues, for example:—in a muscle such as the heart, for when by disease of the valves, an obstacle is placed in the way of the circulating blood, and the heart as a whole, or as one cavity singly, acts with additional force to drive it onward, it hypertrophies, and this is what we find in all instances where sufficient time is occupied in the process, the same being related to growth, but this is not absolutely so, for a part may do more than

grow, it may develop itself, it may acquire new structures, or it may improve those of which it is already composed so as to become fit for higher functions and the exercise of greater power. For example:—in the most ordinary hypertrophy of the heart, the muscular tissue is developed to more robustness and its fibres become not only larger or more numerous, but firmer, more highly colored and stronger. In the pregnant uterus such fibres are formed as are not seen in the unimpregnated state, they are indeed not a new kind of fibre but are so different in size and shape, and so much more powerful than those that existed before, that we may justly speak of them as developed, and this change by development which in pregnancy is natural, may indeed be imitated in disease, when by the growth of fibrous tumors in it, the uterus attains the size, the structure, and even the full capacity of action, of the pegnant organ. In several such cases the imitation being so perfect that the uterus has at length emptied itself as in the normal process of labor, the tumor being expelled entire and complete by its contractile power. A similar change by development and growth of muscular fibre may occur in the gall bladder, the ureter, etc.

Now these few examples of which any part or organ of the body might furnish more under appropriate circumstances, are always as we have before asserted, compensatory. That the body may live, it is sometimes necessary that parts thereof should die, this by a process of degenerative atrophy and witnessed in early life by the functional suspension of glands, but that degenerative atrophy should not run amuck it is in all cases safeguarded by an exactly opposite phase or condition, viz., hypertrophy, which by its plethoric sway, at all times mitigates and many times aborts so-called disease. On this distinctive line rests the mark of functional disturbance, and actual disease, but it is not my intention at this time to take up this part of the discussion, tempting as it is, for if in the present instance, I can succeed in making plain that degenerative atrophy and compensatory hypertrophy, in so far as they themselves are concerned, are not disease, but simply a plan of nature whereby the body may grow, and having grown, live. A safeguard for the maintenance of full and vigorous health, serving to remedy for a time at least the ill effects of structural decay, and again adding to life by the very rhythm produced.

The amplified healthfulness of the formative process exercised in hypertrophy, is testified to by reason of its requiring a full measure of all the conditions of ordinary nutrition. It needs healthy and appropriate blood, and one of the most interesting studies is to watch the hindering influence set in the way of disease, in the occurrence and progress of hypertrophy. In some cases death being clearly the consequence of impairment of the blood which can no longer maintain in the hypertrophic organ the exceeding growth required for its increased functions, or perhaps by what is more familiar to ruptured compensation.

In hypertrophy of bone we find as a rule that it is a secondary process ensuing in consequence of change in a part with which some bone is intimately connected. Just as in their natural development and growth, the bones of the skull are joined in adaptation to the brain, and those of the limbs are framed to fitness for the action of the muscles, so in disease they submit in their nutrition to adapt themselves to the more active parts. Thus the skull enlarges when its contents do, and the bones of the limbs strengthen themselves as the muscles inserted on them become stronger and more active and they do this in adaptation to the force of the muscles, and not merely because of the movements they are subject to, for no extent or force of passive movement would prevent the bones of a limb whose muscles are paralyzed from suffering atrophy.

The process of enlargement in these cases is often one of simple growth, and that indeed to a less extent than it may seem at first sight, for it is very rarely that the due thickness of the skull is attained, while its bones are enlarged in the extension of their superficial area. Hence the weight of an hydrocephalic skull is not much, if at all greater, than that of a healthy one, a large parietal bone for instance measuring nine inches diagonally, and weighing four ounces, while the weight of an ordinary parietal bone is little less. Indeed it is interesting to observe the symetrical placing of the wormian bones by which the extent of the skull is in a measure made up. They show how the formative process though thrown into straits and difficulties conforms both in growth and development with the law of symmetry. In its formation the skull adapts itself to the form and size of the brain, or rather, of its membranes, the thickening of the same being effected by the gradual remodelling of the inner table and diploe of the bones of the vault, so that, although the exterior of the skull may retain its natural form and size, the inner table grows more and more inwards, as if sinking towards the retiring and shrinking brain, not thickening, but simply removing from the outer table and leaving a wider space filled with healthy diploe.

Again it is a fact of singular interest that this thickening, this hypertrophy of the skull, most commonly, if not always, takes place especially, and to a greater extent than elsewhere, in the parts of the bones in and about which ossification commenced in the fetal state, as if, we might say, some of the potency that of old brought the fetal membrane of these parts first into the development of bone, and was always afterwards concentrated in them, or as if a reserve power of growth had its seat in the same centres where was formally the orginative power of development. This pecularity of the centres of ossification is the more remarkable when we remember that in many cases the thickening of the skull takes place in persons far past the middle period of life, indeed it may happen in very old age, and may give evidence of that precision of assimilation, which continues throughout life, characteristic distinctions among portions of what we call the same tissue. Cases are very rare in which hypertrophy of any other bone of the body than those of the skull occur in connection with what is called disease, for the bulk of most other bones is principally determined by the activity of the muscles fixed on them, and a morbidly excessive action of the muscles sufficiently continuous to produce hypertrophy of bones, is seldom, if ever, met with. In the great majority of cases the hypertrophy of muscles whether voluntary or involuntary is the consequence of an increased obstacle to their ordinary action, against this obstacle they exert extraordinary force and this in-

sue. Strictly speaking then it all resolves itself into forces, and their proper or improper adjustment, for, inasmuch as frequent action of muscles unless it also be forcible, does not produce hypertrophy, the heart though it may act with unusual frequency for years, yet does not in that case grow larger, and the muscles of the hands are not generally so large in mechanics who use great celerity of action, as in those who work with great force.

And thus we find that hypertrophy is in all cases related to vascularity, being the opposite phase or condition of atrophy, in which it fulfils the duality of all physical phenomena, and directs our attention to whatever relates to an increased blood supply. Indeed this is beautifully borne out in the central vascular system itself, for it is quite legitimate to liken the systole of the heart to blood flow, and its diastole to blood ebb, a duality, which on the one side is plethora, hypertrophy, and increase, and on the other anæmia, atrophy, and decrease. For hypertrophy to occur hyperæmia must be prolonged or frequently repeated, also the cells of the part must possess ability to grow, for apparently no hypertrophy would prevent a thymus from atrophying, or cause hyperplasia of adult ganglion cells. When muscle contracts against an increased load, it hypertrophies, as is seen in training, unless the load is too heavy, when atrophy may ensue, but to these exceptions we will have occasion to recur later, as we are now searching for the whole law, while nevertheless we may later lend ourselves to attempt an explanation of why true giant growth is more in the direction of length, than of breath, or to hypertrophy of half the body, of parts of limbs, as fingers or toes, (such parts on dissection being found to be normal except in size) or such cases of false giant growth in which the connective tissue alone is increased, and the part misshapen, the hypertrophy of lymphatics, or vessels, whether they be cysts, or nævoid.

Having seen therefore, that while on the one side of vascularity we have atrophy, a primary force chosen by nature to raise organisms to the exalted position they to-day hold, and that the same is related to a lessened blood supply to a part, and that on the other we have hypertrophy, which is always a compensating force, and the very opposite of the former, and related to increase, by reason of a larger blood supply, both belonging as we might say to the body proper, it has lately occurred to us that possibly a like compensating force may run coincidently with disease itself, that is, that possibly the child escapes the exanthemata and perishes as a youth from scarletina, that possibly we borrow from Peter to pay Paul, and, at any rate it has always seemed to us that physical compensation even to disease is a far too little understood subject. For instance, Dr. Thomas J. Mays in making inquiry as to whether registration and disinfection is a successful method of combating pulmonary consumption has the following to say, viz.: "One of the striking characteristics of these charts is that, with very few exceptions, the consumption tracing pursues a general descending course; while the pneumonia tracing on the whole makes a rise." We trust we will not be considered presumptious should we draw the physician's attention to the fact that disease undoubtedly runs in cycles. That is, that it certainly observes a certain periodicity which in influenza is familiar to all, *but who would be so rash as to say that it is limited to this or that disease and not true of all diseases,* at least in so far as it relates to causes acting from without the body? Where is the physician who does not readily recall the cycle of measles in his practice, the years in which they occur in his immediate territory, and the years of their absence, the same not being the result of exhaustion of the soil? Then again, and as we have in former essays spoken of, the entire *disappearance* of a certain disease at one end of the cycle, and the *appearance of an entirely new disease at the other,* and yet from the length of the periods in the latter instance, the same may not occur in the life history of any single practitioner, nor indeed of many, and yet as surely occurring. Written in 1903. Dr. Mays continues (and here let me remark in passing that these statistics were not gathered with any thought of their relation to medical compensation):

"A very interesting point relative to the great predominance of pneumonia during the last ten years of the record, develops at this stage of the investigation. While it must be admitted that a part of this increase is due to the marked prevalence of influenza, during the latter eighties and the early nineties, yet, since this disease has practically died out, it is not at all probable that its influence persists up to the present time, and hence this augmented mortality must be due to other causes. In order to find out just what influence this theory had on the prevalence of this disease, I sent out a letter of inquiry to the boards of health of many of the large cities of the United States (which he names) and a prompt reply was received from all of them. These districts are called prevention and non-prevention localities. Now then, says he, "in all of the twelve prevention localities figures and health board statistics prove that there has been a decrease of phthisis, and yet on the other hand they likewise prove a supplemental and excessive rise in the pneumonia rate in the same localities, and during the same time. Why is it that in the last twenty years this disease increased only 10.45 per cent. in Haverhill, Mass., a non-prevention locality, while in Worcester, a prevention locality and only about fifty miles away, it increased 46.66 per cent. in the same time?

Why is it that in the District of Columbia, a non-prevention locality, pneumonia actually decreased 33.33 *per cent., while in Baltimore, a prevention locality, it increased* 23.58 *per cent. in the same time, recognizing as we must that both places have a like climate, and are only forty miles apart?* In short, and this fact to my mind is a startling thing, why is it that in every one of the prevention localities which represent the greatest cities of our land, places where statistics are accurately kept, and where opportunities are unparalleled for gaining the same, that in just such measure as tuberculosis has been stamped out, or reduced in mortality, by measures of prevention, in almost equal measure *pneumonia* has arisen to take its place? 600 *per cent. higher than where tuberculosis is left to work out its own course.* And so, with never a word of censure for those men who nobly strive from day to day for the entire extermination of disease, let

us also remember that there has dawned upon the physical horizon a law of compensation. *Dawned, have we said,* and yet not new, but coincident with life itself, *compensating* all of visible phenomena which in the higher physical is vascularity. To the systole adding power, to the diastole subtracting power or vice versa, while to diseases arising from without the body ever guiding and guarding.

THE TREATMENT OF NEURALGIA.

BY W. C. ABBOTT, M.D., CHICAGO.

THE treatment of any paroxysmal malady naturally falls into that of the intervals and that of the paroxysms, and we should begin with the former when possible.

In all chronic neuroses the first essentials are the removal from the blood of all toxic elements, and the maintenance of an adequate nutrition. Consequently, we commence by administering say half a grain of calomel, at bedtime, in four doses, or a few doses of calomel, podophyllin and bilein comp. (calomel, gr. 1-6; podophyllin, gr. 1-6; bilein, gr. 1-12), followed by a dose of some good saline laxative next morning on rising, sufficient to completely clear away all the contents of the bowels. If there are evidences of "biliousness," with or without insomnia, give, in addition, from gr. 1-6 to ½ of pure emetine *after* going to bed, with the usual precautions to prevent vomiting. Swallow the dose dry, with no liquid, and lie perfectly still for half an hour or till asleep. The granules or tablets, whichever form may be selected, dissolving slowly will be absorbed as rapidly and will cause no nausea. Keep the alimentary canal clear by such methods during the treatment.

Have the urine collected and tested every twenty-four hours for a week; if there is a marked deficiency in the excretion of solids, this must be remedied. The diet must be regulated to the needs and the digestive capacity. Caffeine, in full doses, should be given to debilitated cases, veratrine to plethoric, and colchicine to the gouty or uricacidemic. Nitric acid is especially useful for oxalurics. All these remedies increase the excretion of urinary solids. Boldine acts beautifully as a diuretic eliminant and is usually indicated.

Much may be done in the way of preventing attacks by attention to personal hygiene—dressing in wool next the skin, hardening the skin by the daily application of cold water, active exercise, regular light and plain meals, and the avoidance of known exciting causes. Anstie insisted that a neuralgic required more food than other persons; and advised cod liver oil, and easily digested fats in excess. This is useful—to those who need it; but in our experience eating beyond actual need is often the cause of the very condition which we are called upon to contend. A layer of fat beneath the skin certainly protects the underlying nerves, but in excess it is objectionable. A wig sometimes makes amends for the loss of hair and materially aids in preveting paroxysms.

Counter-irritation over the foramina, where the nerves may be pinched, is useful by lessening the bulk of the tissues that pass through them. A blister over the sacro-sciatic notch has given quick relief when one applied the whole length of the nerve had failed. Dry cupping to the same locality is often most useful.

The nutrition of degenerated tissues may be improved by the use of zinc phosphide in doses of gr. 1-6 four times a day, removed as far as possible from the meals and continued for one week out of each month. During the remainder of the month, the effect may be sustained by the use of neuro-lecithin. This method avoids all danger of toxic effects from too prolonged use of the chemically active phosphide, and has proved quite effective in the writer's hands. The neuro-lecithin (lecithin derived from the brain and spinal cord) is one of the best nerve builders we possess.

The employment of strychnine, arsenic, iron, quinine and other tonics, in the intervals, is commendable when either of them is indicated. The indiscriminate simultaneous exhibition of everything bearing the name of "tonic" is a disgrace to modern therapeutics.

One of the most effective means of relieving the neuralgic paroxysm is the galvanic current from about five cells. This should be applied for a few minutes over the course of the affected nerve, when the pain will cease; as it recurs the application must be repeated till the force of the attack has been expended (controlled). The writer has repeated the application thirty times before final relief was secured—but, again, he has thus broken up, in a few hours, paroxysms that had endured for months and, through unwise treatment, had made the victim a morphine habitue.

Acetanilid is useful in acute attacks occurring in robust individuals, either with or without fever. Give grs. ij to v, guarded with caffeine and accompanied by soda, two to four doses one hour apart; if relief has not then been attained other remedies are preferable. This is one of the legitimate uses of this much-abused drug, which should never be allowed to get from the drug store into the hands of the laity.

Antipyrin succeeds best in the pains of ataxia, and is somewhat less depressing than acetanilid—and less effective.

Atropine is a powerful remedy for sciatica, lumbar-neuralgia, uterine and spinal irritation, dysmenorrhœa, ovarian and intercostal neuralgias; also for tic douloureux. When the patient's skin is shrunken and cold, the pulse suppressed and tense, atropine will return the blood to the skin and relieve the internal hyperemia. Give, to an adult, gr. 1-500 in hot water, every fifteen to thirty minutes—till the skin reddens slightly and the mouth is dry; if relief has not then been secured, this is not the remedy required; but there are few cases that will resist this king of spasmodic pain. A dose of gr. 1-100 injected close to the affected nerve will frequently conquer the most stubborn attack. It will, however, not remove hyperplastic tissues compressing a nerve trunk. Its action is simply through the vasomotors to drain the part and reduce the pressure causing the pain.

Aconitine is indicated in neuralgias attended by a hard, wiry pulse, throbbing headache, evident displacement of blood suspending circulatory equilibrium—forms of neuralgia usually due to catching cold or the checking of discharges. Of amorphous aconitine, give gr. 1-134, in hot water, every five to twenty minutes, or until there is enough effect on the pulse to show full physiologic action, then less frequently. Associated with quinine arsenate, or the hydroferrocyanide, in tonic dosage aconitine is useful in all periodic attacks.

Bebeerine, from the nectandra and pareira brava, has been recommended as a remedy for periodic cases,

but this alkaloid, having unfortunately acquired repute as a substitute for quinine, we have never investigated with a view to establishing the differences in their therapeutic powers, Bebeerine, however, is more astringent to relaxed connective tissues than is quinine, standing between the latter and berberine. This would indicate its value in relaxed conditions and during convalescence. The tonic dose is about a grain before meals.

Brucine has been advised in hysteric cases, in intercostal neuralgias, and for nervous erethism. This alkaloid possesses marked local anesthetic powers, and is usefully combined with cocaine when the latter does not work well. Otherwise brucine resembles strychnine, though milder in action. The dose is about gr. 1-67 every five to fifteen minutes till evidence of tonic action is manifest. Locally a 2½ per cent. solution may be employed with equal parts of a similar cocaine solution.

Caffeine has also been injected along the course of the painful nerve with asserted local anesthetic action, but does not equal brucine. Caffeine is useful internally for sciatica and other deep-seated neuralgias and for affections of the brachial and cervical plexuses by injection. The dose for hypodermic administration is from one to five grains, made soluble by the addition of sodium salicylate. Both must be chemically pure—the salicylate, if contaminated, will make the solution pink or even black. The solution may be made by dissolving thirty-five grains of sodium salicylate and forty grains of caffeine in distilled water to make two drachms. This gives a grain of caffeine to three minims or drops. Care must be taken to instantly wash out the needle of the syringe after injection, as this solution quickly clogs the small aperture. For internal use, caffeine valerianate may be given in doses of gr. 1-6 to j, every few minutes. Other salts do well in hot water; same doses.

Cannabis is useful for neuralgic headaches and in visceral forms. The dose of a good extract is gr. 1-6 every half to one hour till effect or till disturbance of the sense of time or space indicates toxic action. The want of a reliable and uniform preparation of this curious drug has hindered its use. Its true remedial principle has not, as yet, been isolated.

Capsicum is useful in cases developing after the patient has ceased the habitual use of alcohol or morphine; and when the vital depression extends to the stomach and absorption is stopped. A small dose—gr. 1-67 to 1-15—may be added to other remedies given by the mouth.

Arsenic is effective as a means of breaking up neuralgic consequences, malarial and otherwise; for angina pectoris and in the neuralgias of frigid, anemic amenorrheic women. Of the preparation selected small doses should be given and continued for several weeks. In angina pectoris the writer prefers arsenic iodide, gr. 1-67, four times a day and continued for a year if necessary.

Cocaine gives relief in cases due to overwork, mental strain, anxiety, apprehension, grief or other overmastering emotion; and in those stopping narcotic habits. It is a dangerous remedy, especially to the neurotic. The patient should never be permitted to know what he is taking and it should not be long continued. Disguise it effectually, and in most cases replace it promptly with caffeine or brucine. The dose is gr. 1-6 by the stomach, repeated hourly to effect in the paroxysms.

Colchicine has a wider field than is generally believed. It is the remedy for the plethoric and the uric-acidemic; for attacks following indulgence at the table (post-Thanksgiving headaches); or from catching cold; and wherever there is marked throbbing of the head. The acme of migraine usually presents this indication. The dose is gr. 1-134 to 1-30, in hot water to hasten its phenomenally slow action, and repeated in two hours if necessary. This drug is best given in a single full dose when we have learned the patient's reaction toward it.

The phosphate of copper is said to possess a specific power in relieving pains in the fifth nerve. This has also been claimed for aconitine and for gelseminine. The differentiation has not been cleared up, and seems doubtful. Luton suggested this salt as a remedy for tuberculosis, and it may be specifically valuable in the neuralgias of these cases. The dose is gr. 1-6 every two hours for nine to twelve doses a day.

Croton chloral relieves pain in the scalp; it has given me most satisfaction in relieving the tenderness ("hair-pulling") remaining after the subsidence of a neuralgia of this region. The dose is a grain every hour till relief.

Cypripedin and scutellarin are mild but efficient nervous sedatives or rather calmants. They are useful for the depression attending these attacks; an attempt at differentiation has been made by assigning scutellarin to cases where the pupils are dilated and cypripedin to those showing contraction. The dose of either is from gr. 1-16 to 1, in hot water, every hour.

There is no place in the treatment of neuralgia, a malady of depression, for any of the bromides unless it be camphor monobromide. This may be employed in doses of one grain every half-hour during the early evening, to secure sleep in prolonged attacks or after their subsidence.

Delphinine has been advised in obstinate facial and cervical forms. It combats the vasomotor spasm and any irritation or excitement in the genital sphere, and may be employed in such cases. The dose is gr. 1-67 hourly.

Digitalin can only be considered an accessory, but has been advised in sciatica and aural cases. It is often indicated. Its administration should be regulated by the tension of the pulse.

Emetine may be given to relieve the stomach of a fermenting mass and to stimulate the liver—a grain at bedtime. Sometimes the physician who has been vainly administering direct analgesics is mortified when an emetic reveals and removes the cause of the suffering.

Ergotin proved useful in one case of obstinate gastralgia with pulsation of the abdominal aorta. It was given hypodermically in doses of gr. iij three times a week. The application of this remedy might be amplified. Basis of indication, physiologic action.

Eserine has been applied with good effect for neuralgias of the eyeball; the ordinary solutions of the oculist being used.

Gelseminine subdues sexual irritability and is applicable to neuralgias of this tract. It has been advised for dental pains also, with less evidence in its favor. Ovarian and testicular pains are quite certainly controlled by this agent in moderate doses—gr. 1-250

every half hour, in hot water or hypodermically, until relief follows or the droop of the eyelids signifies that the limit of its useful administration has been reached. If relief has not then been secured, the condition diagnosis has been erroneous.

Iodine may be employed for a syphilitic taint, or to stimulate the absorption of encumbering débris along the course of the affected nerve. The latter indication is apt to present itself in any inveterate neuralgia, whether the painful points of Valleix are demonstrable or not. Massage is a useful adjuvant when exudative masses are found along such nerves as the sciatic. The following is the most powerful absorption stimulant combination the writer has ever employed: Arsenic iodide, gr. 1-67; mercury biniodide, gr. 3-67; iodoform, gr. ½; phytolaccin, gr. 1. This dose may be taken before each meal and at bedtime, for weeks if irritation of the eyelids does not give the signal for its decrease. In the iodides of mercury and arsenic we have our most powerful absorbents; the arsenic acts as a safety valve, directing the irritation to the eyes so that the first sign of overdosage will be there manifested. Iodoform enhances the iodine effect and prevents gastric irritation; while phytolaccin, by stimulating the lymphatic glands, relieves the other absorbents of that duty and leaves them to exert their whole force on the disintegration of encumbering debris which should always be promptly disposed of by saline elimination.

Glonoin is the most active agent we possess to dilate the arteries and acts even more quickly when dissolved in the mouth than it does when given hypodermically. It is indicated when the cutaneous vessels are spastically contracted. Atropine should be added to prolong the effect. Whenever any remedy is administered whose action it is desirable to accelerate, the addition of glonoin, by opening the vessels, secures this object. The ordinary doses are too large—glonoin, gr. 1-250, when of good quality, will sometimes cause unpleasant cerebral fulness, and half this dose repeated every five minutes is preferable.

Macrotin is available for ovarian and uterine pains, for spinal irritation and, possibly, for fifth nerve neuralgias. The dose is from ½ to 1 grain, in hot water, every half hour till relief or nausea occurs.

The injection of solutions of osmic acid along the course of an affected nerve has been employed instead of excision—the acid destroying the tissues. This procedure we do not recommend. We are not believers in the destruction of diseased tissue, preferring to cure it; and when such a measure is unavoidable, we prefer clean surgery to the application of an agency less readily limited to desirable effect. The 1 per cent. solution in distilled water is employed, of which a few drops may be injected. Don't do it!

Phosphorus is probably best represented by zinc phosphide. This is an effective remedy for degenerated nerve tissue; and, as Anstie claimed, true neuralgias probably depend on degeneration of the posterior roots of the affected nerves. The writer commenced to employ this agent in the painful neuralgia attending herpes zoster, obtaining immediate and permanent relief from it. Since then it has been employed whenever this degeneration has been diagnosed, with similar good results.

There is another indication for zinc phosphide; in breaking up severe and obstinate attacks. If the therapeusis of neuralgia is timid and tentative, habituation to the drug will ensue and relief be imperfect; whereas, if the remedies are powerful and thrown in vigorously in maximal doses, the effect will be decided. Quinine, grs. 2; zinc phosphide, gr. 1-6; strychnine arsenate, gr. 1-30; ext. cannabis, gr. ½; given together and repeated every four hours is a model formula for this indication. The full adult dose of zinc phosphide is gr. 1-6 four times a day, for one week out of each month. It is unsuitable for cases due to cold or to inflammation, or for plethoric persons.

Quinine is employed to forestall attacks of periodic neuralgia, and for supraorbitals. A full dose—grs. 15 of the bisulphate—may be given six hours before the expected attack; or (and usually better), the arsenate or hydroferrocyanide in small doses every waking hour. The small dose of the latter salts will usually produce best results.

No one quite appreciates the value of salicylic acid until he administers it in doses of gr. 1-6 every half hour. The constant instillation of this minute dose prevents the growth of micro-organisms and ferments in the stomach, far better than a bulky dose does given at long intervals. Cases dependent on such fermentation, on uric acid, rheumatism, etc., and "tic" when attended with acidity, are amenable to this agent.

Solanine is a drug with a future. It lessens the irritability of the sensory nerve-ends, gives tone to the capillary walls, and relieves hyperemia of the nerve centers. In sciatica, gastralgia and other neuralgias it has replaced morphine with advantage, proving effective without the disastrous possibilities following the use of opiates for recurrent pain. The dose of solanine is gr. 1-12 for an adult every hour till irritation of the fauces (dryness) denotes the limit of its therapeutic benefits. Solanine is a very promising remedy in the treatment of epilepsy.

Strychnine, alone or associated with hyoscyamine, glonoin, or both, ranks deservedly as the best all-around remedy for neuralgia, both for breaking a paroxysm and for preventive medication during the intervals. It is especially useful in visceral forms, for those dependent on sexual and other excesses, and whenever there is relaxation of tissue or languor of function in evidence. The various salts are to be applied as indicated; the arsenate for most cases, the hypophosphite when developmental nutrition in the young is obviously at fault; the nitrate for alcoholics and when the renal elimination of solids falls below normal; the valerianate for speedy effect and when nervous equilibrium is lost. The dose should be arranged with scrupulous care. Many persons can bear no more than 1-67 gr. every two to four hours; some have taken with advantage a grain within twenty-four hours. The dose must be gauged strictly by the effect, the pulse-tension being perhaps the readiest indication. Strychnine may be continued with advantage for a month, rarely longer, with intervals of withdrawal, after which it may again be resumed if still indicated.

When the pulse is hard and wiry, the patient plethoric, the heart hypertrophied, the renal or other elimination so markedly defective that convulsions are possible, the remedy is veratrine. This agent relaxes the vascular tension with certainty, the action being prolonged to any desirable period by careful dosage to effect. Muscular pains and soreness subside under this drug. It acts on all the eliminants, kidneys, skin and liver; and as there is a toxemia present in very many

if not most cases of neuralgia the indication for this agent occurs far more frequently than is suspected by most physicians. Veratrine should be given to adults in doses of gr. 1-134 freely diluted, every half hour till nausea or softening of arterial tension denotes full useful effect. If acute or subacute gastric catarrh is present, or if the patient is very susceptible to the local irritation of veratrine, there will be manifested a sense of heat defining the limits of the stomach; contraindicating the further use of the remedy by this route. The combination of atropine or hyoscyamine with veratrine, will often be found peculiarly effective when the cutaneous vasomotor spasm is marked and elimination low. Strychnine in broken dosage and elimination always indicated.

In the foregoing outline, the term "neuralgia" is employed in the widest sense—rather etymologically than pathologically—as it appeals to the clinician in this way. It is nerve pain he is called to relieve; and the institution of effective therapeusis cannot be too prompt for the suffering patient. The pathologic diagnosis may wait. Relief must not!

From this long list of remedies, the reader may judge of the wealth of our resources for the relief of nerve pain. As we use and study these uniformly acting agents it is evident that most important discrimination, as to their applicability in various conditions, are to be made. While men gave conglomerations of them without much discrimination, such accurate differentiation of their action was impossible. Nearly every prominent alkaloid is a member of a group of closely allied agents, which are at present only known to "resemble" it in a general way, but which will undoubtedly prove to possess special properties of value when studied. We know, for instance, that brucine possesses a local anesthetic power not enjoyed by strychnine; but what about thebaine, laudanine, calbarine, gelsemine and the rest of the tetanizant group? We know little or nothing of them beyond their general resemblance to strychnine. The study of such groups, under the conditions presenting with modern physiology, may be expected when the therapeutic revival we advocate becomes general.

Neuralgia has been tersely defined as "the cry of the injured nerve for mercy," and it is well said.

Neuralgia, as it usually presents, is a symptom of long continued error in the internal treatment of the body so crying out; therefore, above and beyond all measures for reconstructive relief, is the necessity for removal of cause and the elimination of offending débris—clean out, clean up and keep clean!

The Borderland of Insanity is an important subject considered by Savage (*Brit. Med. Jour.,* Mch. 3, '06), who shows that there are nervously or mentally disordered people who should nevertheless not be classed as lunatics. The insane who are not dangerous to themselves or to society should have much greater freedom than they enjoy. There should be some system of notifications as well as of certifications. For some patients complete control is needed; others should enjoy comparative freedom and a natural return to a consistent simple life, with plainer food and more regular occupation. Rowe has contributed a valuable article on this subject, which we have considered editorially. (Incipient Insanity, August, 1905.)

THE VALUE OF VARIOUS NEW FORMS OF TREATMENT.

BY A. R. WILLIAMSON, M.D.

PART II.

To the average doctor the only safe guide, in interpreting disease phenomena, is to find some evidence which can be recognized by the eye, or, if this is impossible, to find at least some evidence through which we may infer the existence of circumscribed and localized lesions: Virchow defended this principle, being willing that it should be interpreted with great latitude, but insisting that, in some sense, every form of disease was to be thought of as a morbid process running its course among limited portions of the tissues and organs. Putnam believes that this conception is in reality inadequate to the completion of the task and needs to be supplemented by another, which recognizes, as forming an integral part of each process classified as disease, a great variety of reactions on the part of the organism as a whole, or at least of portions of the organism, not implicated at all in the primary lesion. These adaptive or compensatory reactions can be spoken of as "physiologic," and the extent to which the organism may take part in them varies, of course, widely. They may even be so widespread, and may overshadow the primary lesion so completely that it is customary to speak of them rather as changes of type than as pointing to disease; but from this change of type, to such conditions as those which follow castration or the removal of the thyroid gland, and even to those in which profound changes of character and type occur, the change is produced gradually. Should this argument be valid then we obviously cannot expect to depend upon anatomic evidence for giving all the information needed with regard to the disease, but must study the genesis of symptoms as well, even though they are in reality evidences of healthy reaction rather than destructive processes. Jackson has long stood as a pioneer in this study of the genesis of symptoms which may be termed "physiologic methods in disease study."

In this connection it is interesting to see why we give drugs at all. Goodhart, before the British Medical Association, pointed out that we administer drugs not only to cure disease, but for many other reasons; drugs are often given, not because the disease demands one, but because the patient is not happy until he gets it; maybe he is not happy even then. Again they may be given to hide our ignorance or to mark time, while we watch and wait; and we often give drugs as an experiment in the expectation that they may do good. It is this individualism in man that constitutes the great barrier to the evolution of any system of medication, it follows that each new patient who demands treatment is more or less a case for experiment; and it is by experiment of this qualified kind not only that the value of drugs is established, and new power gained over disease, but by which an increase of knowledge of disease itself is obtained. The cure of disease is always the fundamental object; but with this should come the alert eye to watch the deviations from the hypothetic normal which the individual resistance, or the drug in its action, may bring out. All treatment by drugs must be more or less of an ex-

periment, and it is this fact that explains the enormous number of new drugs daily poured upon us. Many an ailment that afflicts mankind badly needs a remedy, for which, as yet, no remedy is opportune; and who knows but what in each new drug some human ill may fine its cure? It is well known that diseases run in fashions, and there are fashionable drugs which, while the sun shines upon them, are the darlings of Society.

When will we forget the boom of the anti-pyretics? A few of them have remained to us for other purposes; but as anti-pyretics, they are gone. It is true that they are not by any means valueless when given appropriately, but they were rushed far more than they were worth, and they are now buried by a corresponding reaction.

Recent researches have shown that digitalis is far from being a simple drug; for example, five glucosides have been isolated from the medicine: (1) Digitalein; (2) Digitoxin; (3) Digitonin; (4) Digitalin; and (5) Digitin; all oxidizable substances, they yield, as the result of their oxidation reduction heat, carbonic acid and water, but only four have active influence on the animal economy, and while three have actions in common, the fourth is absolutely antagonistic. Porter, after long study, decided the chemical composition of digitalis to be complex, some of its active principles antagonizing others. The various preparations of digitalis differ widely in their composition and action. The so-called cumulative action of digitalis is due to its contracting the arterioles and shutting off nutrition. It is both a useful and a dangerous remedy, and has a very limited range of usefulness. It is of use only in lesions of the mitral valve, and then only for a short time, and should be discontinued as soon as these have been overcome. It is of value as a diuretic only where there are low arterial tension and engorgement of the kidney. Digitalis decreases the excretory action of the normal kidney and impairs its nutritive activity.

At a meeting a few years ago of the New York Neurological Society in the discussion of electrical reactions and their value in diagnosis and prognosis the following conclusions were reached: The value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not so universally recognized as its importance demands.

The result of this procedure often furnishes corroborative and conclusive evidence where only a provisional diagnosis has been made. The necessary technical skill in successfully pursuing such investigations and correctly interpreting the result can only be acquired through special study and practice. The use of faradiac current alone is quite sufficient for diagnostic purposes. As a rule the galvanic current is supplemental to the faradaic and in the absence of faradaic irritability in nerve and muscle it is of the greatest service in prognosis. The discovery of the reaction of degeneration is not an esential feature in the diagnosis as to the situation of the lesion.

The peripheral nerve fibres possess an inherent power of regeneration which seems almost unlimited, the length of time required for the completion of the regenrative process varying from a few weeks to seven years or more. Therefore, in severe forms of injury, the cause, degree, and character of damage to the nerve are often of greater importance in prognosis than the demonstration of the reaction of degeneration. The presence of reaction of degeneration, or partial reaction of degeneration, is not incompatible with the preservation of motility in the same area. This paradoxical condition has been found in cases of lead poisoning and a few others, but thus far the cause has been inexplicable. Strong currents are only rarely necessary. The weakest current that will produce a distinctly perceptible reaction is all that is requisite. A decrease or disappearance of faradaic irritability in nerve and muscle simply denotes an interference with the nutrition in the course of the motor tract between the multipolar cells in the anterior horn and the peripheral nerve distribution. It does not enable us to judge of the nature of the pathological process. The character of the reactions does not differ, whether the lesion is situated in the cells of the anterior horn, the anterior nerve roots, the nerve trunks, or their ultimate distribution. The same rule holds good in reference to the various cranial motor nerves and their nuclei, such as the facial hypoglossal and spinal accessory nerves. When the faradomuscular irritability is lost, no reaction can be obtained by a rapidly interrupted galvanic current. The secondary current from an induction coil is the one generally used in testing faradaic irritability. Owing to its high electro motive force, the resistance encountered in the moistened skin may be disregarded. The difference in the poles of the faradaic current is only a relative one, and cannot be determined by the usual tests as applied to the galvanic current. The electro motive force in the secondary coil is greater at the "break" than at the "make." The electrode that is felt to be stronger in its action is usually considered as the negative or so called "faradaic cathode." In some apparently healthy individuals the musculo spiral nerve fails to react to strong currents applied with the "faradaic anode," while a comparatively weak current from the "faradaic cathode" calls forth a quick response. In a case of undoubted peripheral paralysis the faradaic irritability may be preserved, but it almost invariably requires a stronger current to produce muscular contractions than upon the healthy side (quantitative decease). The character of the muscular reaction demands attention. A slow and labored contraction associated with decrease in faradaic irritability denotes degenerative changes. The faradaic irritability may return in persistent cases of peripheral paralysis without any perceptible improvement in motility. Electro diagnosis is inapplicable in paralysis of ocular muscles. When the farado muscular iritability is lost upon skin excitation its presence may be demonstrated in the muscle for a longer time by means of acupuncture. If electricity is to be of any service in ascertaining whether the nerve trunk has been divided or not as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if special surgical interference is necessary. Should two or three weeks elapse before such examination, it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for. The tests with the galvanic current require adequate apparatus and a working knowledge of the relationship between electromotor force, resistance and current strength. They also require much time, patience and perseverance;

hence their unpopularity."

While on this subject the views of Rockwell are interesting. He believes there is a tendency to underestimate the general therapeutic utility of the faradaic current, for its quantity is so small as compared with the current direct from the cells, that to mechanical influences alone are attributed whatever beneficial effects follow its use, and therefore it has been urged that other mechanical methods—massage and contrivances for producing rapid vibratory movements—are just as good. This is due to a mistake as to the real action of the faradaic current, as well as from a restricted practical experience in its use. A thorough general application of the faradaic current brings relief to muscular tire after prolonged activity, and an increase in the flexibility of limbs that have become sore and stiff after the rest following excessive and unacustomed muscular exertion. In studying this result we know that mechanical effects are undoubtedly important; not as shown by vigorous muscular contraction, but through molecular agitation sufficient to give passive exercise to both the superficial and the deeper tissues. In such cases cell exhaustion with circulatory sluggishness exists, and a deposit of the toxic products of metalbolism, all which conditions are more or less benefited by the mechanical effects of the current. The faradaic current is now applied with such admirable results in chronic congestion and induration of the uterus; the blood flow in the congested organ being accelerated, circulatory drainage is established, and a healthy local action more effectually produced than by any known method. We do not get from the faradaic current chemical or endosmotic or exosmotic effects are of principal importance in the study of the nounced character, and as these take place only by virtue of the vitality of the tissues, these physiological effects are of principal importance in the study of the nutritional effects of electricity. It is evident that we get upon the nerve structure itself, together with mechanical effects, influences of an entirely different character. In the use of the galvanic current the advances have been considerable in the past few years, due in great measure to better apparatus and instruments of precision. But so far as the faradaic current is concerned, the great utility of currents of high tension when applied to low resistances, and especially by the bipolar method, cannot be overestimated. As an anægesic in uterine and abdominal pain, when passed through the low resistance of the mucous membrane, these induced currents of tension are of the greatest service, but so far as external applications of the faradaic current are concerned, Rockwell doubts whether we have advanced much either in the methods of application or in the efficiency of the apparatus. The coil of twenty years ago—the so-called continuous coil—is refererd to, with its two thousand feet of wire and its perfect rheotome attachment yielded a current the essential characteristic of which as an aid to nutrition and for general tonic effect has not yet been surpassed. The most important thing in connection with the use of electricity in medicine is its influence over nutrition. It increases the resolution of peri uterine exudates.

The benefit following galvanization of the brain is due to reflex influences, according to Hare, and not to the direct passage of the current through the brain substance. He supports this view by some experimental observations which seem to him to indicate that when a current is passed between the electrodes it does not pass through the brain substance at all, but in the direction of least resistance—namely, the scalp. This, he thinks, was proved experimentally by placing electrodes, one on the occiput and the other on the forehead of a large dog, and arranging a milliampere meter in the circuit. The amount of current indicated in one experiment was 5¾ milliamperes. The same dog was then trephined and a needle connected with one pole of the circuit was plunged into the brain substance, the other terminal being placed as before. It was now observed that the amount of current passing was only 3¾ milliamperes. In other words, the resistance, acording to Hare, is less in the circuit formed by the two wet sponge-coated electrodes and the scalp than in the circuit formed by the needle, brain substance, bones and two layers of scalp with the other sponge-coated electrode.

Deve, on the contrary, reports the following experiments, which seem sufficient to prove that electricity acts perfectly within the central portion of the brain. Upon the head of animals about to be killed two electrodes were placed at the end of the biparietal diameter, and a current of 60 milliamperes passed between them. Two galvano puncture needles, insulated to within 5 milliametres of their points were connected with an astatic galvanometer, thus forming a secondary circuit. This done, these needles, now positive and negative, were plunged into the scalp in the following positions. The primary current was 60 milliamperes:

(1) They were plunged into the bi-polar line 5 centimetres from each electrode, when the metre of the secondary circuit after one minute registered 14 milliamperes. (2) They were separated from each other on this line 4 centimetres, 1 to 11 milliamperes showing. (3) The distance between them was doubled, 1 to 5 milliamperes showing. (4) The positive needle in place, the other was introduced upon the occipit frontal line, 1 to 2 milliamperes. From these and other tests the following conclusions were drawn:—(1) The current passes through the scalp, bone and encephalon. (2) It is stronger in the scalp and grows weaker by diffusion, the more rapidly when electrodes are removed furthest from the biparietal line. (3) It spreads itself evenly through the entire encephalic mass. Nevertheless, assuming that gray matter is a better conductor than white, it is probable that electrical intensity is greatest in the cortical layers. Then, taking for granted the storage of electrical energy, we can schematically represent the head by a sphere, on the surface of which is found the thickest part of a layer of fluid, the thinnest nearest the centre, while the middle layer will correspond to the gray cortical substance. The greatest resistance in the passage of electricity was found in the inner table of the skull.

In the alternating sinusoidal current lately introduced into electrotherapy by D'Arsonval the essential feature is that it has a uniform rise and fall of potential from zero to the maximum, and back to zero again in both directions. For this current it is claimed that it posseses greater penetrating power than the ordinary faradaic current, and that less pain attends the vigorous muscular contractions that it produces. Apostoli's conclusions as to the effects of the alternat-

ing sinusoidal current was as follows: Applied to the intrauterine cavity, it is always well borne and free from danger. Its application is followed by no painful or febrile reaction, and is, on the contrary, generally accompanied by manifest sedative effects. It appears to have no marked action upon hæmorrhage as a symptom, but sometimes has a tendency to prolong this symptom. It exercises a very decided effect upon the symptom pain. This action was noticeable from the very first seance, and most often immediately at the end of the seance. It is a useful remedy in the treatment of leucorrhœa, which under its action often diminishes or disappears. It has no appreciable effect upon hydrorrhœa or fibroma in certain cases. Its influence upon anatomic retrogression in cases of fibroma has not yet been determined, but it increases the resolution of periuterine exudates.

THE LATEST SUGGESTIONS IN THE TREATMENT OF CHILDREN'S DISEASES.

BY WALTER BERGER, M.D.

PART I.

IN the past ten years at the Stockholm Hospital, Heilstrom has seen one hundred and twelve cases of measles complicating diphtheria and one hundred and seventeen cases of diphtheria complicating measles. In the first classification where croup appeared, only 37 recovered and 61 died, while in the 14 cases without croup all the patients recovered but one, forty of these deaths being children under 3. The mortality in the measles croup cases was 62.24 per cent., while it was only 27.3 per cent. in the cases of uncomplicated croup. The mortality in the 117 cases of measles after diphtheria was only 8. About 91 per cent. of the patients in this group were under 6 and 81 per cent. of those in the first group. In 21 of the patients the diphtheria before the onset of the measles had been of the croup variety; the respiratory organs did not seem to be more seriously affected in these cases than in those without preceding diphtheria; only one child had a complicating pleuritis later. Since the introduction of serum treatment the mortality of measles croup has been reduced by nearly 18 per cent., and most of the deaths occurred in cases not seen until almost moribund. When this possibility is remembered constantly and serum treatment is instituted always in time, the outcome will be far better.

It is the modern view to believe that measles and whooping cough are not harmful; Cacerly deprecates the tendency on the part of the profession and of the public to consider these diseases as such, for although the death rate from scarlet fever has been lessened considerably by judicious preventive measures, that from measles and whooping cough remains unchanged; from their fatalities they are as important as scarlet fever or diphtheria. There are peculiar difficulties in their prevention, for the indifference of the public is shared by the profession, and consequently many patients fail to see a physician. Again they are contagious at a time when they cannot be recognized and the variable length of the time that they remain virulent. There is yet not sufficient unanimity among doctors as to the necessity of preventing these diseases, which is difficult due to the fact that their early symptoms are common to these and many other less severe and less contagious diseases, the schools offering the best opportunity for their spread. Consequently in catarrhal diseases of all kinds affecting the upper air tracts, the suffering child should be excluded from the school.

In looking for prodromal rashes of measles, Rolleston found them in 30 cases of measles, or 42 per cent. of the total number of cases he observed. The youngest patient in whom a rash was noticed was one year old, and the oldest nearly 9 years old, proving that the eruption was not a mere roseola infantilas, such as usually attributed to dentition or to the presence of worms. In 22 out of these 30 cases the prodromal rash appeared on the first day of the disease, and in 3 of these the specific eruption followed on the second day; in 4, on the third day; in 9, on the fourth; in 3, on the fifth; in 2, on the sixth; an in one it was delayed until the eighth day. In 7 cases the prodromal rash appeared on the second day; in 3 of these cases it was followed by the specific eruption on the fourth day; in 3 on the third, fifth and sixth days respectively. In 10 cases the prodromal eruption preceded catarrhal symptoms by intervals ranging from one to six days, and in 18 cases the two phenomena appeared on the same day, but in 11 cases the catarrhal symptoms, although present, were ill developed for a period of from one to three days after the first appearance of the prodromal rash. In only 2 cases did the prodromal rash appear subsequently to the catarrhal symptoms, in each case the interval being only one day. In 12 out of 24 cases in which Koplik's spots were noted, the prodromal rashes preceded the buccal exanthem by periods varying from half a day to five days. In the remaining 12 cases the two phenomena appeared on the same day. The isolated macules, 14 cases; blotchy erythema, 10 cases; isolated papules, 9 cases; urticaria, 9 cases; scarlatiniform rash, 9 cases; circinate, erythema, 1 case; the maccules and papules were the first to appear. Urticaria was the latest thing, sometimes co-existent with the specific eruption; the isolated papules were frequently of the size and shape and sometimes of the same distribution as the rose spots of enteric fever. Sometimes they suggested the eruption of rötheln. The frequent appearance of scarlatiniform rashes on the second day of the disease, before the development of catarrhal symptoms, the acompanying injection of the soft palate and fauces and occasional deposit on the tonsils, with submaxillary adenopathy, add to the difficulties of the diagnosis, but the transient nature of the eruption and the association of Koplik's spots, stomatitis and catarrhal symptoms are impotent factors in making a diagnosis of measles. The distribution of the eruption was as follows: On the trunk, 28 cases; behind the ears, 15 cases; limbs, 14 cases; face, 4 cases; neck, 2 cases. The short-lived existence of most of these rashes serves in a degree to account for the scanty attention they have received and associate with their transient existence is the tendency to be localized, not affecting any special situation. Highly characteristic is the simultaneous association of several varieties of eruption, and the fact that these prodromal eruptions are not accompanied by any cutaneus irritation. There is no pain or pruritis,

nor is there any subsequent desquamation, and these initial rashes are not of any prognostic value in treatment.

Now that the early determination of diphtheria is so vital, a new bacteriologic method of arriving at a rapid diagnosis of its presence by means of stained smears made directly from the false membrane present described by Higley is valuable. The smears must be as thin as possible and thoroughly washed and dried between the applications of the stains used; the material for the smears is obtained by means of a strong wire loop needle, the wire being flattened by filling so as to form a sort of curette. The smear is made in a drop of distilled water. Two stains are used. No. 1, 5 drops of Kuehne's carbolic methylene blue in 7 c. c. of water; No. 2, 10 drops of carbol fuschsin in 7 c. c. of water. Fix the smear with the flame in the usual manner. Apply stain No. 1 for five seconds, wash with water and dry with filter paper; apply stain No. 2 for one minute, wash, dry and mount in balsam. These stains must be absolutely fresh. The diphtheria bacilli appear as dark as red or violet rods, irregularly stained, and often containing polar dots. The epithelial cells are stained a bright red. Other micro organisms may appear of the same color as the diphtheria bacilli, but the unevenness of contour of the latter and its mode of division obviates confusion in diagnosis. When properly carried out the diagnosis can be made in fifteen minutes.

In the use of antidiphtheria serum as a prophylaxis of diphtheria Wesener gives his experience with 1,745 cases of diphtheria at Aix. It is his custom to inform the person accompanying the sick child to the hospital of the danger of the spread of the disease, and to propose to give all the children in the family a preventive injection of the serum. Nearly two hundred and fifty of such injections were made in consequence, and only four of the children thus protected contracted the disease, and in 3 it developed within forty-eight hours, proving that they must have been already infected. In the single failure in the series the disease was so mild that it seemed to be merely an ordinary sore throat, but the discovery of diphtheria bacilli caused it to be accepted as genuine diphtheria. The protection conferred by the injections enables the isolation of the patient to be less strict; the period of protection lasts about three or four weeks; this is usually sufficient for the purpose if the premises are also disinfected.

The statistics as to diphtheria antitoxin continue to collect and they are very powerful arguments. The latest is by McCollom, who discusses the treatment with antitoxin in Boston and in several cities in the East. He gives in a chart the percentage of mortality at the Boston City Hospital proper and at the South department from 1888 to 1904, inclusive, with the percentage of mortality of intubations. Previous to 1895 the death rate varied from 46 per cent., in 1888, to 48 per cent. in 1893; in 1890 and in 1894 the death rate was 36 per cent. and 38 per cent. respectively. In 1895, in the latter part of which year the South department was opened and antitoxin was given to every patient ill with diphtheria, the death rate fell at once to 14 per cent.; since that time it has fallen gradually to 9.5 per cent. If the deaths that occurred within twenty-four hours of admission are eliminated, of which there were forty, the actual mortality of diphtheria amenable to treatment during 1904 was 6.95 per cent. The mortality rate of intubation cases previous to the use of antitoxin varied from 78 to 86 per cent., but from 1895 to 1904 the mortality rate of these cases varied from 64 to 26 per cent., and this diminution in the mortality rate is attributed to the use of antitoxin. In Chart B he indicates the ratio of mortality per ten thousand of the population for thirty years, while Chart C shows the percentage of cases of diphtheria sent to the hospital, with the percentage of deaths to the population from 1888 to 1904; Chart D shows a ratio of mortality per ten thousand of the population in Boston, New York, Philadelphia, and Brooklyn for the past twenty years. McCollom comes to the proper conclusion that antitoxin is of tremendous value in the treatment of diphtheria, but to obtain the best results it is important that the serum should be given at the earliest possible moment in the course of the disease, and in severe attacks it must be given in very large doses.

Gonococcus vaginitis is a very frequent disease in institutions for children, as shown by Holt, being very frequent, too, in dispensary and tenement practice and not uncommon even in private practice. While in its milder forms and in sporadic cases it is extremely annoying because so intractable, in its severe form it may be dangerous to life through setting up an acute gonococcus pyemia or infection of the serous membranes, and in its epidemic form it is a veritable scourge. Children suffering from this disease must not remain in the same wards or dormitories with other children, because it is practically impossible to prevent the spread of the disease if infected children remain in the wards with others. If a purulent vaginal discharge is present, a systematic microscopic matter of routine, but in the absence of microscopic examinations, purulent discharge in a young child should be assumed to be due to the gonococcus. One of the greatest difficulties in connection with the gonococcus vaginitis arises from the prolonged quarantine necessary, because these cases are of chronic character and hard to treat. The epidemic of vaginitis reported by Cotton extended from August, 1902, to September, 1903; during this period 319 children were admitted to the hospital, exclusive of the maternity and scarlet fever annexes, the average age being seven years and two months; there were 151 girls and 168 boys. The cases known to be infected numbered 19, only 1 of these being a male. The extremes of ages were six months and 16 years; between these there were 1 of eight months, 2 of two years, 7 of three years, 2 of four years, 3 of six years, 1 of nine and one-half years and 1 of 10 years. The first discharge was from the uretha of a two-year-old boy, under treatment for rectal fistula, 17 days after his first operation, during which interim he had been taken daily to the dressing-room or clinic. Gonococci were next found in the vulvovaginal discharge of a typhoid patient, 2 days after admission and five days after the reported cure of the first case. These two patients appear to have furnished the infection for the entire epidemic; six girls developed vulvovaginitis inside of 21 days; 3 were typhoids, and 3 were surgical cases; all were diapered and all had temperatures taken daily per rectum with the ward thermometers. No new cases

appeared for 54 days, when a vaginal discharge was observed in an eight-months-old surgical case. Most of the patients were infected from the first two cases that occurred. The discharge yielded only to the most heroic forms of treatment, such as douching with strong antiseptic solutions, 10 per cent. pro targol, every four to six hours, preceded by 1 to 2,000 permanganate of potassium solution, and some obstinate cases required additional packing of the vagina with gauze saturated with a 2 per cent. solution of protargol. Of the 18 patients who showed the infection in the hospital, 10 were discharged cured, 2 died of intercurrent disorders and 6 were removed while under treatment. Every hospital for children must be protected against infection from without by "detention wards," in which the newly admitted patient may be subjected to the closest scrutiny to determine his freedom from an acute infection. A complete hospital should also have properly located isolation wards to which patients may be removed on the first appearance of suspicious symptoms of an acute infection. The interne or nurse, while treating a gonorrheal patient should be relieved from other duties in the children's wards; the same care by nurse and physician in sterilization is as necessary as would be observed in going from a child with any acute infection to a non-infected child.

A disposition to convulsions may be either hereditary or acquired, or both factors may be present, as in rachitis, which undoubtedly predisposes to convulsions. The exciting causes may be divided into the following groups (Ashby): (a) Reflex from the intestinal or respiratory tracts, from the internal ear, or from the nose or mouth. (b) Toxic, as in measles or influenza. (c) Central, as in meningitis or syphilis of the brain. (d) Epileptiform, when no cause can be found, and associated with belated intelligence. Convulsions in the newly born are usually reflex and not due to any brain injury, especially in artificially fed children, and the best cure for these is a wet-nurse. A slight hemiplegia may ensue, and disappear after a few days or weeks. Occasionally the convulsions are due to defective brain development, while later dentition undoubtedly plays a part in the production of convulsions, but Ashby dissents from the view that such convulsions may go on to epilepsy and insanity. Convulsive spasm of the glottis is practically always associated with rachitis. Convulsions may be of cerebral origin, and due to meningitis, thrombosis, hemorrhage, tumors, or syphilis. The nature of the fits does not lend much assistance in the diagnosis, although convulsions distinctly of a Jacksonian character are usually due to a syphilitic softening of the cortex of the brain. Slight general convulsions, frequently recurring without apparent cause, and with delayed intelligence, are unfavorable. In the severer forms of convulsions, there is usually high fever, one seizure is followed by another, and deep coma lasting from a day to a week supervenes. Hemiplegia is an important complication; it may be temporary, or persist for life and the limbs become spastic. Blindness may result, but rarely permanent; in other cases the patient may come out of the convulsions deaf or aphasic. As regards treatment, subcutaneous injection of morphine is the most powerful remedy for quickly allaying the irritability of the nerve centers and checking the convulsive movements; a six-months-old infant even may be given a fortieth of a grain on an emergency.

Appendicitis in children is difficult of diagnosis, states J. H. Hess (*Archiv. of Pediat.*), because of the difficulty of examination, due to crying, restlessness and general rigidity and the inability of the very young to relate their symptoms. General or local peritonitis may be the first sign; pain and hyperæsthesia when associated with vomiting and constipation are often symptoms sufficient for diagnosis. There may be "belly-ache" and the curled up lateral decubitus. The pain may be referred to the right testicle or to the region of the bladder; it may at first be localized at McBurney's point, and may soon become diffuse, radiating from the umbilicus to the pelvis. In rare instances perforation may precede pain. Tenderness on pressure is of little value. Rigidity of the right rectus is present early, but is difficult to make out because of the general abdominal rigidity on examination in the very young. Nausea and vomiting soon follow the onset of the pain; chill is rare. The pulse corresponds with the temperature, becoming rapid, weak, soft and irregular with peritonitis. The temperature is not to be relied upon; there may be little fever in very bad cases; there will be a distinct fall after perforation and with the onset of peritonitis. Constipation is the rule; diarrhœa is occasional and indicates a less urgent type. Tympanites develops late. There may be flexion of the thigh and a tendency to put the hand to the region of the appendix. There is frequent micturition. Rectal examination may in older children localize the point of greatest pain; and in later stages abscess. After a few days a lump may be felt in the iliac fossa. The leucocyte count is less valuable than in adults, for in children it may normally reach 20,000 or more. A decided leucopenia is a serious manifestation in the presence of peritoneal infection. In making a diagnosis one must bear in mind colic, indigestion, intersusception, acute intestinal obstruction, Pott's disease, renal or biliary colic, perityphlitic or perinephritic abscess, pneumonia and pleurisy, tuberculous peritonitis, incipient inguinal hernia, typhoid fever and undescended testicle. Cases have been reported at six weeks of age. (If the physician is perplexed and needs a consultant, he had best call in a surgeon, for appendicitis is a surgical disease.)

A new sign of hereditary syphilis is declared by Jukowski to be "a peculiar dryness and mobility of the epidermis. In the newborn presenting slight atrophy this phenomenon is to be found only in certain regions —the chest, the abdomen, the neck, sometimes only the palms and soles. In syphilitic cases, however, the entire epidermis is loose and covers the underlying cutis like a thin shirt. When the child moves this loose epidermis is thrown into folds and presents a curious wavy surface. There is here a very characteristic picture. A few days after birth the skin changes slowly, owing to deep cracks which now come to view and to the accompanying scaling. The fissures go through the entire skin, and the bleeding stripes and spots give the surface a variegated aspect. There is no icterus. In the cases studied by Jukowski no other known symptoms of syphilis were present.

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With every influx of light comes new danger. Has he light? he must bear witness of that light.—*Emerson.*

THE PRESENT PROSPECTS OF THE MEDICAL GRADUATE.

IN the first eight years of this century, there will have been graduated from the medical schools of this country about fifty thousand physicians. Despite the fact that the profession is notoriously overcrowded, there has been an increase in the number of matriculates from the year 1882 to 1902 of one hundred per cent. Of course our population is growing steadily year by year, but the increase of physicians is far greater, thus taking the proportion of one physician to six thousand of population, allowing for a natural death rate among physicians, there would be required about three thousand new doctors each year. But in 1902, as an illustration, there were graduated five thousand physicians, considerably more than is required to meet the exigencies of the times. On the other hand, abroad, especially in Germany and France, there is a decided diminution in the number of medical students each year.

On top of this condition of affairs, the council on medical education of the American Medical Association presents a report upon the minimum requirements for admission to medical schools, which, if adopted by state boards, will necessitate of each applicant after January 1st, 1908, that he shall take a five-year medical course. The first year is to be devoted to physics, chemistry and biology, and may be spent in a school of ordinary collegiate attainments. Thus the difficulties are heaped on the unfortunate student of medicine. Each year new branches are added to his work, new data, new theories and new work piled upon him. If a collegiate degree is required in addition, this makes eight or nine years of preparation without hospital work of any sort. Surely no profession in the world requires such preliminary work of its probationers.

Professor Marshall, of the University of Pennsylvania, in his recent report to the Provost, states that "it is only a question of time and that not very far distant when this radical step must be taken, since under present conditions the student's time is so occupied with the regularly scheduled work and exercises that he has scarcely any opportunity to review and digest the facts he has learned or to broaden his mind with collateral reading. When the day's work is done the average student has reached the limit of his capacity for any work which taxes his mental faculties and requires concentration of thought. This must be recognized as an unfortunate state of affairs from which under the present régime there is no escape." Hence Professor Marshall feels that there is a legitimate demand for a five-year curriculum. Dean Marshall's views are of great value, as he is in constant touch with medical student work and sees daily its limitations and trials. Yet it must seem to many minds that a five-year course might well stagger the stoutest heart. It is a question whether the present course could not be utilized in such a way that non-essentials could be placed in the background and the great general outlines of medical practice be covered in four years.

In the average medical school there is not enough cooperation between the various departments. Each pursues its course undisturbed by the work of other chairs and hence one department may absorb all the energies and thoughts of the students for the year, as was the case at the University of Pennsylvania under Professor Marshall's predecessor, the late Professor Wormley. This celebrated chemist made his course so hard and long that the second year of the three-year course then pursued was practically sacrificed to studying chemistry, anatomy, physiology, the practice of medicine and surgery were all forced into the background by the demands of one enthusiastic teacher. Few schools realize this danger or strive to avoid it. Often the amount of work required of students is so far beyond their strength that the professors would be astounded if they knew the truth. All of this may be said to favor a five-year course, but there is in this work much material that could be abridged or generalized. Thus in Professor Wormley's teachings, a large part consisted of teaching obsolete facts and methods which were not recommended or advised, yet the student was required to learn them thoroughly. All such work should be cut out; each professor should know what his colleagues are doing and economy of time and energy would work wonders. If a fifth year was added, each professor would add to his curriculum and probably the five years would be as crowded as the four are now, as the three and two were years ago.

PHYSICAL EDUCATION AS AN INTEGRAL PART OF A COLLEGIATE CURRICULUM.

IN the spring of 1904 the Board of Trustees of the University of Pennsylvania made a course in physical education a part of the university cirriculum, for sutdents under twenty-one years of age, and upon all over that age for whom the Director may consider it advisable.

A broad distinction must be made between athletics and physical education. In most athletic games the education of the body is a mere incident and not at all of an educational nature.

Professor McKenzie adopted a scheme of physical education of which the main requirements are;

(1) Increased respiratory; (2) developments of the neglected muscle groups of the arms, chest and abdomen, and (3) the training of neuro muscular control which is lamentably lacking in so many cases that present themselves for examination. The great mass of men must begin with the simplest movements and exercises, going to more complicated work as progress points out to be necessary. In this way the student receives a complete education of his strength, speed, agility and endurance besides an acquaintance with the elementary movements of games and sports.

In an analysis of the first one thousand men examined, Dr. McKenzie found that five hundred and ninety-four showed marked defects of some sort, one hundred and sixty have uneven shoulders, the right being lower in all than twenty cases. Eighty-four showed well advanced lateral curvature of the spine. In two hundred and nine cases the chest was flattened and the shoulders round to the extent of interfering with respiratory movements. All these cases were capable of being straightened and developed by proper exercises. Two hundred and seventeen men showed a breaking down of the arches of the foot. Hernia, unprotected, was found in twelve cases and gastro-intestinal trouble in two hundred more.

Dr. McKenzie began with six hundred men on his class list; one hundred and eighty-four were excused as being on teams, and seventy-seven were physically disabled, making a total of eight hundred and sixty-one men. The work was popular from the start, and when weather permitted was conducted in the open air.

In the matter of eyes a careful examination was held which revealed many unexpected conditions. As a result of this work it has been shown that there was a crying need for this systematic inspection and work, as vital and pressing as any developments along intellectual lines, for a sound body is essential to a sound mind, and this work and report of Dr. McKenzie shows how much has been neglected in college circles. Ordinarily the men who use a gymnasium voluntarily, are men who do not especially need it. The average college student must be forced into it as a part of his curriculum.

A NATIONAL QUARANTINE.

A BILL for a national quarantine is making its way through Congress. It has passed the House by a vote of 202 to 26. Its passage is imperative, as every humane person must agree who recalls the dreadful lack of adequate and concerted quarantine measures which obtained last summer in Louisiana and the adjacent states. It were well to consider for a moment such steps as have been taken in the past to this end.

It has for many years been obvious to sensible Southerners, no matter how strongly they may have felt concerning "states rights," that in such matters as the prevention of contagions Federal laws generally get themselves enforced, while state and local regulations are quite as generally unequal to the emergency. James W. Garner has in the *Yale Review* summarized Federal legislation relating to public health since the time of Washington. We shall here review only the period dating from the creation of the National Board of Health in 1879. By its power of offering pecuniary aid to state boards, it induced general compliance with its recommendations and "an approximate degree of uniformity and efficiency" was thus secured. The Secretary of the Treasury was, in 1890, for the first time authorized to formulate rules and regulations to prevent the spread of plague without regard to the local provisions; but this applied only to interstate quarantine. In 1893 it was enacted that the Federal authorities, if they find local regulations inadequate, may make additional ones and, if the local officers refuse or neglect to enforce them, the President can do so. This plan, however, quite lacks the rapidity of action absolutely necessary to avert great danger. In the first year of this new law a cholera ship actually landed at an American port before its clumsy machinery could be brought into action. We have also seen two sets of quarantine officials at one port, putting every arriving vessel to double expense and delay through the farce of reinspection.

The present system, which was found to be so impotent in and about New Orleans last summer, is virtually one of local quarantines, some stations being obtained by national, some by state, and some by municipal authorities. By means of an annual conference of quarantine officials most of the stations have gradually been taken over by the national government, even without new legislation. There now remains indeed but eight disinfection and twelve inspection stations

maintained by states and cities. To say that some of these must be more efficient than others is only to say what is true of every other group of human institutions under independent management, especially if it be of a semi-political sort. "But there are not many human institutions in which even temporary laxity is likely to be followed by such dire consequences. Against the attacks of disease our coast line is no stronger than its weakest point."

The present bill, as it stands at this writing, has one rather unfortunate feature. It is intended to restrict only against yellow fever. The national quarantine should be of a general sort, directed against all infections and epidemics which may attack any one or all sections of the country. No doubt this feature will receive due consideration by the Senate, and may be remedied by that body. The control of all quarantine stations, grounds and anchorages is to be placed by this measure under the Secretary of the Treasury, and directs that as soon as practicable after the passage of the act he shall select and designate such suitable plans for them and establish the same at such points on or near the seacoast of the United States, or on the Mexican border, as in his judgment are best suited for the same, in order to prevent the introduction of yellow fever into the United States. A quarantine station is to be established at the Dry Tortugas Island and at three other points at or near the seacoast. It is also provided that every common carrier engaged in the interstate commerce shall receive and carry through any state or territory passengers, freight and baggage which may have been discharged and properly certified in accordance with the regulations of the Public Health and Marine Hospital service.

ASEPTIC MONEY.

WE note that a bill has been introduced into Congress providing for the franking of dirty or mutilated bills to the United States Treasurer, by any individual or corporation, and the redemption of the same in new bills, without any charge for postage or exchange.

Washington residents detect visitors by their possession of dirty bills, and we understand that local conditions for the redemption of old bills are more favorable than in other parts of the country. Various bacteriologic tests have shown that all metals are unfavorable lodging places for germs, and that many, including those used for coins, have a positive, though not great, antiseptic action. Paper is, however, a fairly good medium for collecting germs, and undoubtedly acts as a medium for the conveyance of infection, although cases in which this can be positively demonstrated are obviously rare. However, various pathogenic organisms, including tubercle and diphtheria bacilli, have been isolated. The New York Board of Health found that moderately clean bills from a grocery yielded an average of 2,250 bacteria; dirty bills, 73,000; cents, 26; dimes, 40. Coins held in the mouth by diphtheritic children yielded no bacilli after forty-eight hours. Bills infected with diphtheria bacilli yielded cultures for a month.

The visitor to most European countries is surprised at the relative amount of coin in circulation and the corresponding scarcity of bills. Even the pocketbooks are differently made, on this account. The Bank of England never reissues a note that has been returned.

While welcoming any legislation tending to improve the disgraceful condition of our paper currency, it occurs to us that there may be some objection to the method proposed. A more practical scheme would be to provide for the redemption of dirty and mutilated currency at various banking centers throughout the country, say in 100 of the largest cities.

Dr. A. L. Benedict, of Buffalo, has proposed the use of aluminum cards of a size corresponding to the bill as ordinarily folded. Such currency would be fairly aseptic, light, no more bulky than bills, and both printing and impression or actual perforation could be employed to prevent raising of denomination and counterfeiting.

AS TO VACATIONS.

PATIENTS become oftentimes so "run down" that tonics, diet and like measures are no longer effective, and the only prescription available is to take the sufferer away from his work and to pack him off somewhere for a vacation. It is in the form of this final prescription, this last recourse, that physicians sometimes make mistakes. For instance, not so very long ago a "magnate" on the verge of collapse, whose mental and bodily habit had been of an extremely active sort, was counselled to go to Europe and rest. He was to do absolutely nothing but eat, sleep and sit on a hotel porch, where the most vigorous exercise he might indulge in was to twiddle his thumbs for many hours at a stretch. He started in to obey these directions; but such was his temperament that he was no more able to continue in this course than he could reach Mars by means of a dirigible balloon. The result was that, craving such excitement as had always been meat and drink to him, he kicked over the traces and provided a mild scandal by turning to gambling, a sport to which, it seems, he had not theretofore been addicted.

The point here is that in counselling recreation for a man whose mind and body are naturally active, one will harm rather than benefit by prescribing a course of inocuous desuetude; for the activities over which the patient has become wearied other and diverse ones must be substituted. The patient just instanced would no

doubt have done very well and would have become thoroughly rested and refreshed if an inspiriting tally-ho through the beautiful and ever-varying scenery of England and Scotland had been prescribed; or a yachting cruise (not on a steam yacht) with the patient himself taking hold of a rope now and then.

Another mistake, and a graver one, we think, is to prescribe active exercise for a patient past middle life, whose habits through many years have been sedentary. Such a course has not infrequently proved fatal or has, at any rate, hastened a fatal issue. Such a patient would probably do best on a grassy bank by a pretty stream with an interesting book to raise his eyes from now and then. If such a patient is to take exercise at all, it must be carefully graded. The man advised to play golf, who has never played the game before, must be restrained from making eighteen holes the first day; a few holes must suffice to begin with, with much resting between drives. Among the best of exercises is walking, we think, which must also be graded. On a walking trip no more than five miles should be undertaken the first day, ten the next; at the end of a week one may then walk from sunrise to twilight without fatigue and with enormous appetite.

Of course there should be change, as pointed out in a recent discussion before the American Academy of Medicine; but the change should not be so revolutionary as to be a shock to the system. The clerk should exercise his muscles and get into the open air at the end of his day's work. In New York City there is a wholesome fashion among lawyers and "Wall Street men" by which this matter of exercise is well adjusted. Many of these men walk down to business, and return in the afternoon by the same means of locomotion. It is rumored, we know not with how much truth, that occasionally this excellent habit of walking to and from business is to some degree nullified by imbibations not at all of a salutary nature. And in exercising the body the mind should also enjoy a wholesome stimulus; this is supplied in such competitive games as tennis and golf. The *Journal of the American Medical Association* points out very well that in considering the effect of exercise on the nervous system (which is the source of all energy) we should recall that different occupations make a call on the energy of different areas in the brain. "In exercise we must attempt to rest the areas used in the daily routine and to bring into play different areas. Naturally muscle workers do not require the same sort of recreation as brain workers. In fact, the two classes need forms of recreation almost diametrically opposed." These observations, we think, are in conformity with those to which we have ourselves given expression.

Three Thousand and Seventy-five Americans took the cure at Carlsbad last year. How our German colleagues must love "the dear—and easy—Americans."

DRUGGISTS AND SUBSTITUTION.

WHENEVER we hear people talk about druggists and substitution, we like to recall a man by the name of Diekman—George C. Diekman, M.D., Ph.G., Professor of Dispensing Pharmacy in the Columbia University and Member of the New York State Board of Pharmacy. We once heard some observations which this gentleman made in a public meeting; and we reached the conclusion that he is the kind of man who, whenever he says a thing, there is no need for him to add to his statements an affidavit signed and sworn to.

Dr. Diekman has been in a position to collect data, which he presented in the *Medical News,* June 17, 1905; these data demonstrate that statements accusing druggists of fraudulent and sordid substiutution and adulteration are absolutely false concerning at least ninety per cent. of these professional men. What other calling could make a better showing than this? In his official relations with the State Board of Pharmacy he has had collected during the year 1904 more than two thousand samples from pharmacists carrying on business in and about New York City. Analyses of these samples showed that 87.37 per cent. were standard or nearly so. 117 samples, representing 5.51 per cent. of the total number collected, were found to contain methyl alcohol; most of such preparations were intended for external use. Besides, these samples were not taken from 117 different sources; three, and sometimes four of them were in many instances taken from the same store. 151 samples, representing 7.12 per cent. of the total number collected, were found to be deficient in strength, but containing no ingredients except such as constitute the pharmacopœial formula. Such violations are usually the result of a careless supervision during the process of manufacture of such preparations; they may well be classed as errors of omission rather than of commission. In some instances it was found that the pharmacist sold to the public preparations deficient in strength, while, if a physician's prescription were presented for the same preparations, they were dispensed of a quality strictly in accord with the official standard.

Some of the samples were collected from stores not classified as pharmacies, which are, nevertheless, under the Pharmacy Act, permitted to sell such "household remedies" as cream of tartar, borax and the like. Every adulterated sample of cream of tartar was purchased from a grocer, whilst every sample of drug store origin was found to be pure.

We pass from much other equally convincing statistical matter, to the observation that the druggists have had enacted a law which requires that an apprentice possess a much higher degree of education than heretofore; the course which he must now pursue if he would

practice pharmacy in New York State is certainly a difficult and arduous one. It is thus evident that pharmacists are endeavoring to develop the professional side of their business rather at the expense of the commercial side; as one result a greater outlay for hire of assistants is necessitated. The ultimate object is to elevate the profession of pharmacy to the same level with our own, so far as educational requirements are concerned.

What we want to emphasize, however, is that he who makes sweeping assertions of dishonesty concerning any calling, is utterly ignorant or oblivious of human conditions. Human nature is to the good; more than fifty per cent. to the good. If one reflects for a moment he must conclude that civilization were impossible on any other basis. Most men are honest; if they were not, the world's business could not be done. We recall a conversation between a physician and a druggist in which the advantage, so far as good temper is concerned, was certainly with the latter. The physician declared: "Oh, well; all you druggists are substitutors." "Yes, and all you doctors are ab—" (we don't like to print the word). "But you know very well," continued the druggist, smiling genially, "that neither statement is true." And this the physician had the grace to admit. There are exceptions, of course; but, as a rule, the druggists make up our prescription prescriptions faithfully and accurately.

THE SMOKE NUISANCE.

There are some people doing business in the metropolis who feel that the palladium of our liberties is being destroyed, that the blood which our forefathers shed has been shed in vain. At least they say things to this effect—or their lawyers do for them—in loud and blatant language. The Health Department has been prosecuting them for violating the law, in that they have been burning soft coal in a manner to produce an unhealthful amount of smoke and soot; and some very effective evidence has been produced in the shape of photographs of volumes of heavy smoke pouring from factory chimneys. We ask the reader to note our phraseology. It is not against the law to burn soft coal; but it is so to produce by this means black smoke and soot such as is a nuisance and a menace to the communal health.

Bituminous coal can be burned in such a way that chimneys under which it is used will not belch forth hideous and noxious vapors. Prof. W. Jones, who is engaged by the Metropolitan Railroad, states in a letter addressed to our esteemed lay namesake, that in the power plant of this company there is little or no smoke produced. This result depends in no way upon any special apparatus termed a "smoke consumer;" indeed, Prof. Jones knows of no such apparatus. "The whole trick in burning soft coal and producing no smoke is to feed the coal gradually to the furnaces, and in such a way that the smoke produced is produced only in the front part of the furnace and is consumed in passing over the back part of the fire, which is a bed of incandescent coke, the whole fire being gradually moved from the front to the back of the furnace. This feeding is, of course, done in all large plants by machinery, both for soft and hard coal." In small furnaces, an intelligent fireman—none other should be employed—can get the same results, no matter what coal is used.

The city of Cleveland furnishes a demonstration of a smokeless city in the factories of which soft coal is almost exclusively used; and this result is brought about in a community of nearly half a million by a staff composed of a special engineer and three inspectors—backed up by a wholesome public sentiment. The public sentiment is, after all, the thing that does the work; the officials are but its instruments. They have in that city a law, rigidly enforced, to arrest, not only the fireman, but "the owner, agent, tenant, occupant, or any other person in charge or control of" any structure other than a private house.

The chief complaint of those prosecuted for these nuisances is that hard coal is so difficult to get—it is so expensive. We confess there is something in this. Hard coal is very expensive—why, is not easy of explanation. Mr. Baer and his confreres might enlighten us; but they would probably consider impolitic a frank statement in this regard. What the humble citizen can reason out, however, is that a year ago the Pennsylvanian miner got seventy cents a ton for his diggings (we have not seen what the poor devil gets to-day) whilst the consumer must pay nearly ten times as much for this same amount of coal. Evidently there are somewhere in this business those who are extortionate. Here, we think, is a situation in which we might well pray for at least a brief presence among us of a benevolent despot with full power of life and death. Yes, anthracite comes high; but, as we have pointed out, it does not have to be used. It is complained that if soft coal cannot be burned, practically all factories will have to be closed down. But the contrary obtains in Cleveland, where, during the past four years, the number of manufactories has doubled.

NITROGENOUS FERTILIZERS.

Certain disquieting rumors have recently found place in the lay press; we must now begin to expect this sort of thing in the lay press, for spring is upon us and summer will soon follow, when the silly season in journalism is at its height. Some one who combines a genius for pessimism with an inordinately acute faculty of calculation has prophesied that the world's wheat supply would, within a certain fixed number of centuries (we don't recall the exact number of them), be insufficient for its rapidly increasing population because of a prospective insufficiency of nitrogenous fertilizers. We don't, for our part, like people who make calculations tending to enhance the fears of humanity or its perplexities. Humanity suffers enough from this sort of thing as it is. We would, if we could, add such morbid calculators to the Gilbertian list of "people who might just as well be under ground, and who'd none of them be missed." Now, however, comes a satisfying man and a true benefactor—Sir William Ramsey—who points out that the air over each square mile of the earth's surface contains enough free nitrogen to afford sufficient plant food for the whole world's needs. And we quite agree with an exchange which ventures the opinion that we "could probably spare a square mile of atmospheric nitrogen once or

twice in a century without seriously affecting the general average." And close upon the statement of this reassuring knight comes the announcement that Birkeland and Eyde, of Christiana, have perfected a process for the fixation of atmospheric nitrogen and the synthetic production of nitrites by the use of a special electric furnace, in which an alternating electric arc was produced at between 3,000 and 4,000 volts, but under special conditions, the arc being formed between the poles of a large electro-magnet, which forced it to take the form of a roaring disc of flame. In these furnaces such a disc of flame was four or five feet in diameter, and was enclosed in a metal envelope lined with fire brick, through which air, being blown, emerged charged with nitric oxide fumes. These fumes were collected, allowed time further to oxidize, then absorbed in water-towers or in quicklime, nitric acid and nitrate of lime being the result. The latter, in several forms, including a basic nitrate, is known as Norwegian saltpetre. It is as good as Chili saltpetre as a fertilizer; the lime in it being of especial advantage for certain soils. We should note that the chief fertilizer now in use is the nitrate of soda exported from the nitrate beds in Chili; and it is estimated that these Chilian beds will be exhausted in fifty years. Before their discovery the Peruvian guano deposits were used; these are, however, now exhausted to-day.

These fertilizers are now extracted from the atmosphere in other places. There is a station at Arendal in the Hitterdal, at Niagara Falls, where the electric conversion of water power is cheap; and at Charlottenberg, in Germany, where the product is called kalkstickstoff.

CLAUSTROPHOBIA.

A number of peculiar psychic states, in which the emotion of fear is predominant, have of late years reached the dignity of scientific discussion. But recently Dr. Weir Mitchell contributed a valuable paper on "The Fear of Cats." Ergophobia—the fear of work—has received consideration, some of which has been rather diverting and not altogether scientific, with relation to this affliction as it seizes upon the American genus "tramp" and his English congener, who when asked his occupation answered that he did not work—he was a gentleman. Agoraphobia—the fear of open spaces—is, however, a distinct medical entity requiring serious consideration; and equally so is its opposite claustrophobia, the fear of confinement. The author, Philip Gilbert Hamerton, furnishes a case history of this malady, and an excellent one, for the reason that this patient was in all other respects quite sane and normal. Hamerton was the author of the admirable book, "The Intellectual Life," which is much too little read, and was also a biographer, novelist, painter, etcher, essayist, poet, critic and a "Saturday Reviewer."

One might here dismiss the claustrophobia of Hamerton on the assumption that he was a genius; however, this many-sided man was not so in the sense that "genius is allied to madness;" he was not one of those of whom crankiness and foolish notions are to be expected as a matter of course. He was a son of a hard-headed, sensible parents; and was himself a herd rider, a carpenter, an oarsman, a swimmer who could smoke a pipe in the water, and a designer and builder of all kinds of lake and river craft; and his literary and artistic successes were due to "leaden hours of plodding rather than to golden moments of inspiration." The memoir written by his devoted wife is filled with allusions to this melancholy infirmity. For instance, there is this record of an attack immediately after crossing the English Channel (he was neither seasick nor nervous on the water): Immediately on leaving Dover for London his wife perceived signs of uneasiness in his behavior. He closed his eyes so as not to see moving objects; he uncovered his head, which seemed by the flushed face to be burning; he chafed his cold, bloodless hands and shuffled his feet to bring back circulation; his eyes had a far-reaching look and unusual steely brilliancy; his expression was hard-set, rigid, almost defiant, "as if ready to overthrow any obstacle in his way; and, indeed, it was the case, for, unable to control himself any longer, he got up and told me hoarsely that he was going to jump out of the train. I took hold of his hands, and said I would follow; only I entreated him to wait a short time, as we were so near the station. I placed myself quite close to the door of the railway carriage, and stood between it and him." Happily, a railway station was soon reached; when he rushed from the train and into the fields. His wife followed him "like one dazed and almost heart-broken." After half an hour he lessened his pace and turned to her and said, "I think it is going." For two hours they continued to walk, at the end of which Gilbert said tenderly, in his usual voice, "You must be terribly tired, poor darling. I think I could bear to rest now. We may try to sit down."

Now comes an exhibition of brutality on the part of those who "did not understand." This unhappy incident occurred near Adisham on a Sunday and during church time. Hamerton's noble wife, a Parisian lady, imperfectly acquainted with English speech and customs, found an inn. The sudden descent of a French woman without luggage and a distraught Englishman seemed obviously an outrageous and a scandalous occurrence; and it was only after prolonged argument and a show of passports that the slightest refection was set forth. The end of the affair was a merciful convalescence, dragged out without even a bedstead; for the mattresses were spread on the inn floor.

The prayer of the Medicine Man to nature in behalf of a little child is described in *The Journal of American Folk Lore.* The life of the infant is pictured as about to travel a rough road, stretching over four hills, marking the stages of infancy, youth, manhood, and old age. Eight days after a birth the Medicine Man is sent for, who comes, clad in his priestly robes, and stands at the door of the tent in which the child lies. Raising his right hand to the sky, he calls: "Ye Sun, Moon, Stars, all ye that move in the heavens, I bid ye hear me! Into your midst has come a new life. Consent ye, I implore! Make its path smooth, that it may reach the brow of the first hill!" And so, in poetic language, does he ask for help of the elements and of all forces in nature with regard to the second, third and fourth hills. And finally he prays that having reached thus far, its path may be made smooth, so that it may travel thence beyond the four hills.

BIBLIOGRAPHICAL

Chemistry of the Proteids.—By Gustav Mann, M.D. (Edin.), B.S., (Oxon.), University Demonstrator of Physiology, Oxford. Based on Professor Otto Cohnheim's "Chemic Der Eiweisskörper." London and New York: The Macmillan Company, 1906. 606 pages: Octavo, $3.25.

This volume while based upon Professor Cohnheim's classical work, has not only been extended and brought up to date, but many questions are discussed and opinions expressed, which are at variance with the views held by this distinguished author. The work may, therefore, be considered a new one. The author says that so-called neutral salts are as a matter of fact not neutral, for it is their very want of neutrality which allows them to dissolve in water, and which also enables them to dissolve globulines or to keep these compounds in solution.

The author has attempted to bridge over the gulf existing between the biologists and the physio-chemical school, a most important matter. The student of chemistry should have this book.

On Professional Education with Special Reference to Medicine.—An address delivered at King's College, London, Oct. 3, 1905, by T. Clifford Allbutt, M.A., M.D., F.R.S., Hon. D.Sc., Oxon., etc., Regius Professor of Physic in the University of Cambridge. London and New York: The Macmillan Company, 1906. Price, 75 cents; 80 pages, 12mo. This classical production is worthy the attention of those who are interested in its subject.

A Treatise on Surgery.—In two volumes. By George R. Fowler, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic, etc. Two imperial octavos of 725 pages each, with 888 text illustrations and 4 colored plates, all original. Philadelphia and London: W. B. Saunders Company, 1906. Per set: Cloth, $15.00 net; half morrocco, $17.00 net.

The appearance of this work has been looked forward to with great anticipations by the profession, the late lamented author's standing in the field of practical surgery being of the highest order, and our expectations should be fully satisfied by his masterpiece. He has given us an accurate, up-to-date treatise on surgery, skilfully presented. It is an entirely new work and presents the science and art of surgery as it is practised to-day. The first part deals with general surgery, and embraces what is usually included under the head of principles of surgery. Special attention is given to the subject of inflammation from the surgeon's point of view, due consideration being accorded the influences of traumatism and bacterial infection as the predisposing and exciting causes of this condition. Then follow sections on the injuries and diseases of separate tissues, gunshot injuries, acute wound diseases, chronic surgical infections (including syphilis), tumors, surgical operations in general, foreign bodies, and bandaging. The second part of the work is really the clinical portion, devoted to regional surgery. Herein the author especially endeavors to emphasize those injuries and surgical diseases that are of the greatest importance, not only because of their frequency, but also because of the difficulty of diagnosis and the special care demanded in their treatment. Throughout, special attention has been given to diagnosis, the section on laboratory aids being unusually excellent. The text is elaborately illustrated with entirely new and original plates and cuts, and evidently neither labor nor expense has been spared to bring this feature of the work up to the high standard of artistic and practical excellence. In the language of the author, "the work represents the highest ideal of the bookmaker's art." The work will stand as the greatest monument that can be reared to the author's memory.

A Hand-Book of Climatic Treatment, Including Balneology.—By William R. Haggard, M.A., M.D., F.R.C.P., London; H. B. M. Consul at Davos, Switzerland. London and New York: The Macmillan Company, 1906. 536 pages. Octavo, $4.

The chief aim of this volume is to place the therapeutics of climate upon a solid foundation, by means of physiology and classification, and especially fitted for the needs of the profession. A concise account of meteorology, or the factors of climate, from a medical standpoint, precedes the physiological discussion. Another point which should be emphasized is the therapeutic classification of baths and mineral waters, a practical and useful undertaking. The book will be found invaluable for ready reference.

The Crux of Pastoral Medicine.—The Perils of Embryonic Man: Abortion, Craniotomy and the Cesarean Section; Myoma, and the Porro Section. By Rev. Andrew Klarmann, A.M. Second, revised and enlarged edition. Price net postpaid, $1.35. New York: Fr. Pustet & Co.

This little book seems to have satisfied a want in the theological world on important questions, so that a second edition has been called for. It voices the teachings of the Roman Church, and its followers will certainly be interested in the perusal of this volume.

Nursing in the Acute Infectious Fevers.—By George P. Paul, M.D., Assisting Visiting Physician and Adjunct Radiographer to the Samaritan Hospital, Troy, New York. 12mo. of 200 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $1.00 net.

This book has been written especially for the nurse and with a knowledge of the subject that can have been gained only by intimate association with routine hospital work. The care and management of each fever has been accorded special attention, as these subjects are of particular interest to the nurse. The author has divided his work into three parts: The first treats of fevers in general; the second of each fever individually; the third deals with practical procedures and information necessary to the proper management of the various diseases discussed, such as antitoxins, bacteria, urine examination, poisons and their antidote, enemata, topical applications, antiseptics, weights and measures, etc. The author has rendered a valuable service, not only to the nursing but also to the medical profession, as much of the information given will be found of service to the general practitioner.

Saunders' Question Compends.—Essentials of Genito-Urinary and Venereal Diseases. By Starling S. Wilcox, M.D., Professor of Genito-Urinary Diseases and Syphilology, Starling Medical College, Columbus, Ohio. 12mo of 313 pages, illustrated. Philadelphia and London: W. B. Saunders Com-

pany, 1906. Cloth, $1.00 net.

This little work is a worthy addition to Saunders' Question-Compend Series, a series that has reached a sale of over 265,000 copies. In this present work by Dr. Wilcox all genito-urinary and venereal diseases are fully detailed in the terse, direct language of question and answer, so that the student grasps immediately the point in question. Illustrations are freely used, adding much to the value of the book; and the large clinical experience of the author stamps it at once with accuracy and thoroughness. For the student there is none better; and the practitioner will find in it much that he is called upon every day to put into practice.

The Operating Room and the Patient.—By Russell S. Fowler, M.D., Surgeon to the German Hospital, Brooklyn, N. Y. Octavo of 172 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $2.00 net.

In this admirable work we have a book that has long been needed, one that is unique in that it is the only work on the market devoted entirely to operative technique, with the preoperative procedures of sterilization and preparation. Written by a surgeon of rich clinical experience for the use of surgeons, nurses assisting at an operation, and hospital internes, it clearly describes the preparation of material of all kinds, indicates the instruments required for the various operations, details the preparation and care of the patient before and after operation, and the methods of anesthetization, describes and illustrates the position of the patient for difficult operations, and contains all other information a knowledge of which is necessary to produce the highest efficiency. Indeed, it is a most excellent and most valuable work for practical use, and the operating surgeon will find it of additional value as it furnishes him a guide to which he may readily add his own variations of technic. The publisher is to be congratulated upon his part, which is in the highest art of book-making.

A Reference Handbook of the Diseases of Children.—For Students and Practitioners. By Prof. Ferdinand Fruhwald, of Vienna. Edited, with additions, by Thompson S. Westcott, M.D., Associate Professor of Diseases of Children in the University of Pennsylvania. Octavo volume of 553 pages, with 176 illustrations. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $4.50 net; half morocco, $5.50 net.

To those of the profession who are acquainted with Professor Fruhwald's work in the original German, it is hardly necessary to speak of the extremely valuable service the W. B. Saunders Company has performed in presenting this English translation. It must be said, however, that the translation possesses an advantage over the original—though it be the work of a leader amongst leaders in pediatric knowledge—in that the editor, Dr. Westcott, has incorporated much valuable matter, the results of his own valuable experience. With a view to making it of special service as a practical reference book, the individual diseases have been arranged alphabetically, with numerous cross-references. This is a novel feature of untold value to the busy practitioner who wishes information quickly. Special consideration has been given to symptomatology, and the prophylactic, therapeutic, and dietetic treatments have been elaborately discussed; especially is therapy treated according to the latest discoveries. The illustrations are practical and excellent, nearly all being reproductions of original photographs and drawings representing cases from Prof. Fruhwald's own clinic. We can foresee for this work the same great success in this country that it has achieved in Germany.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology.—By George F. Butler, Ph.G., M.D., Associate Professor of Therapeutics in the College of Physicians and Surgeons, Chicago. Fifth edition, thoroughly revised by Smith Ely Jeliffe, M.D., Ph.D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia University (College of Physicians and Surgeons), New York. Octavo of 694 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $4.00 net; half morrocco, $5.00 net.

The fifth edition of this text-book has been entirely remodeled, rewritten and reset, bringing it in accord with the new (1905) Pharmacopeia. All obsolete matter has been eliminated, and special attention has been given to the toxicologic and therapeutic effects of the newer compounds. The general arrangement of the book has been so changed that those drugs the predominant action of which is on one system of organs of the body are grouped together, thus suggesting their therapeutic, as well as their pharmacologic, alliances. This classification is more thoroughly practical and useful than any other. By use of a more compact type the work has been reduced in size. The book can be recommended as one of the best of its class.

Diseases of the Eye.—A Handbook of Ophthalmic Practice. By G. E. deSchweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania. Fifth edition, revised and enlarged. Octavo of 894 pages, 313 text-cuts and 6 chromo-lithographic plates. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $5.00 net; half morocco, $6.00 net.

This is so well known that anything but a mere mention of the new edition seems superfluous. The success it has achieved is readily accounted for if one but glance through its contents. In this edition, enlarged by the addition of new matter to the extent of some one hundred pages, there have been added, amongst other subjects, chapters on the following: X-Ray Treatment of Epithelioma, Xeroderma Pigmentosum; Purulent Conjunctivitis of Young Girls; Jequiritol and Jequiritol Serum; X-Ray Treatment of Trachoma; Infected Marginal Ulcer; Keratitis Punctata Syphilitica; Uveitis and Its Varieties; Eye-ground Lesions of Hereditary Syphilis; Macular Atrophy of the Retina; Worth's Amblyoscope; Stovain, Alypin; Motais' Operation for Ptosis; Kuhnt-Muller's Operation for Ectropion; Haab's Method for Foreign Bodies; and Sweet's X-Ray Method of Localizing Foreign Bodies. Other chapters have been rewritten. The excellence of the illustrative feature has been maintained and thirty-three additional text-cuts have been added. Dr. de Schweinitz's work was long ago recognized as an authority and this new edition will continue to hold it there.

A Text-Book on the Practice of Gynecology.—For Practitioners and Students. By W. Easterly Ashton, M.D., LL.D., Fellow of the American Gynecologic Society; Professor of Gynecology in the Med-

ico-Chirurgical College of Philadelphia. Second edition, revised. Octavo of 1079 pages, with 1046 original line drawings. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $6.50 net; half morocco, $7.50 net.

The fact that two editions of Dr. Ashton's new work have been required in the short period of six months indicates beyond a doubt that the professor was quick to appreciate the practical merits of the book; indicates that the general practitioner wants a treatise on gynecology that does not assume him to be an expert gynecologist, but rather describes in detail, not only what should be done in every case and emergency, but also precisely how to do it. Owing to the short time that has elapsed since the appearance of the first edition, and also from the thorough manner in which Dr. Ashton handled his subject originally, the changes in this edition are necessarily few in number and limited chiefly to the correction of a few typographical errors and the alteration of several of the illustrations. In reviewing this new edition we cannot refrain from again speaking of the very practical illustrations. There are 1046 of them, all original line drawings made especially under Dr. Ashton's personal supervision, from actual apparatus, living models, dissections on the cadaver, and from the operative technics of other authors. All superfluous anatomic surroundings are eliminated and the operations and procedures are detailed step by step with clearness and accuracy. Certainly, the success the work has won is well deserved and fully to have been expected.

Progressive Medicine, Vol. I, March, 1906.—A quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medicia in the Jefferson Medical College of Philadelphia. Octavo, 304 pages, with 7 engravings. Per annum in four cloth-bound volumes, $9.00; in paper binding, $6.00, carriage paid to any address. Lea Brothers & Co., publishers, Philadelphia and New York.

The subject considered in this volume are: (1) The Surgery of the Head, Neck and Thorax, by Charles H. Frazier, M.D. (2) Infectious Diseases, including Acute Rheumatism, Croupous Pneumonia and Influenza, by Robert B. Preble, M.D. (3) The Diseases of Children, by Floyd M. Crandall, M.D. (4) Rhinology and Laryngology, by D. Braden Kyle, M.D., and (5) Otology, by B. Alexander Randall, M.D.

Practice makes perfect in the art of assimilating only the very best from a vast amount of material. It follows, therefore, that as all the contributors to Progressive Medicine have profited by their experience in the past, their readers are enabled to learn in an hour what it has taken them months to acquire.

The general get-up of the book, the paper, print and indexing, are of a solid and enduring quality, and make its use not only profitable but pleasurable.

The Examination of the Function of the Intestines by Means of the Test-Diet.—Its Application in Medical Practice and its Diagnostic and Therapeutic Value. By Prof. Dr. Adolf Schmidt, Physician-in-Chief of the City Hospital Friedrichstadt in Dresden. Authorized translation from the latest German edition, by Charles A. Aaron, M.D., Professor of Diseases of the Stomach and Intestines in the Detroit Post-Graduate School of Medicine; Clinical Profesor of Gastro-enterology in the Detroit College of Medicine; Consulting Gastro-enterologist to Harper Hospital, etc. With a frontispiece plate in colors. Crown octavo, 91 pages, extra cloth. Price, $1.00, net. F. A. Davis Company, Philadelphia.

This little volume sums up for practical purposes the investigations and observations of the distinguished author for about eight years. It has been the desire to obtain an examination for the function of the intestines, that could be carried out in practice, analogous to the usual examinations of the stomach contents, and to advance by means of it the diagnosis and therapeutics of the diffuse intestinal diseases, in the same way as it has already been accomplished in the pathology of the stomach. The work while yet having many gaps, is far in advance of anything that has gone before, and less complicated. The book will be found interesting and instructive.

The International Medical Annual, 1906.—A résumé of the year's medical literature, by thirty-one department editors, with added articles by noted specialists. Substantially bound in cloth and fully illustrated by plates in color and black and white. Octavo, 700 pp., $3.00. E. B. Treat & Co., New York.

This is the 24th year we have been commending this excellent publication, and each issue seems to be an improvement on the predecessor, until now the work is about as perfect as possible. The dictionary make-up especially commends it to the busy practitioner. Part I. is devoted to materia medicia and therapeutics, with clinical indications for the use of drugs. Part II. gives an index of diseases, especial attention being devoted to questions of diagnosis and treatment. Part III. covers the field of sanitary science. The text is *multum in parvo*, in one handy volume and offered at a nominal price. We shall continue to commend the book unqualifiedly to our readers.

Appendicitis, declares Wallace, and quite rightly, is a surgical disease (*Jour. A. M. A.*, Mch. 31, '06). Every patient should have and is entitled to operative measures within forty-eight hours. To the rapidly progressive stage (third, fourth or fifth day) the Ochsner treatment is applicable, and this affords the lowest mortality. Ochner has with regard to this stage enunciated a sound surgical principle: lavage and peristaltic rest by rectal feeding; however, this principle cannot be made to apply to all cases in all stages. Operation in this rapidly progressive stage usually means rapid extension of the sepsis and death; peristaltic rest means a limitation of the lesion and a day most favorable for surgical intravention. Cases evidencing gradually subsiding symptoms should be deferred to a more favorable operative period. Operation should be urged in every interval or chronic case. In abscess cases two safe rather than one hazardous operation should be done. In diffuse peritonitis all dependent cavities should be carefully incised and drained and not flushed; and, secondarily, the offending organ should be removed.

CORRESPONDENCE

LEGAL UNITY OF THE MEDICAL PROFESSION.

To the Editor of THE MEDICAL TIMES:

Assembly bill No. 1715, introduced by the Committee on Public Health, is now pending, and the exceptional enlightenment of the present New York State legislature encourages us to believe that it has a fair chance of passage. This bill provides for a single state examining board under control of the regents and does away entirely with the present tripartite board and with the recognition of homœopathy and eclecticism as separate schools of medical practice.

Following so closely upon the professional reunion of the two divisions of the regulars in New York, this bill has an important significance and amply justifies, if any justification were needed, the efforts to reunite the Society and the Association in New York. Not so many years ago an effort to compel action by the Society looking toward reunion was met by a proposition to dodge the immediate issue but to formulate a grand plan of reunion of the entire medical body. This plan was criticized as being in analogy with an attempt to cement together four pieces of a smashed vase all at once; and the practical necessity was urged of joining together the two principal fragments first, letting them adhere firmly, and then trying to add the other fragments.

For over 20 years New York has witnessed the experiment of a tripartite examining board and the state recognition of three schools of practice. The experiment was a costly one, for it disrupted the regular profession in the state, it caused the estrangement of the New York Society from its daughter, the American Medical Association, and it led to the development of as much medical politics as could be imagined.

We believe that the experiment was worth the price. The tripartite method was admittedly a compromise measure, endorsed only because, for some eight years, the legislature, influenced by the plea of the homœopathic and eclectic schools, had refused to pass a law establishing the medical profession as a unit.

Under the circumstances we believe that the state legislature was right in this refusal. While it is true that the two dissenting schools, together, numbered not much more than a tenth of the total medical profession, the community as a whole could not disregard them nor suffer them to be legislated into a cypher. And we are not so sure but that the regular profession needed the lesson of tolerance and needed to have its pride of organization humbled.

At any rate, the tripartite plan has, all things considered, worked well. It has shown up many defects and inconsistencies, helped bring about a broader if less insistent ethical spirit, and tended to efface sectional lines by drawing them in an arbitrary way. It has been a case of *similia similibus curantur*.

Meantime, forces have been at work that have made it more and more apparent that the tripartite method was a temporary expedient. Medicine has been placed on a much stronger scientific foundation in the last twenty years. So long as medicine was mainly an art, and an empiric art at that, and so long as medicine as an art rested mainly on medicine in the concrete sense, there was opportunity for two forms of bigotry. On the one hand, the bigotry of catholicism could maintain that organization, numbers and antiquity, could formulate a schedule, composite from the ideas of many, which might not be widely departed from. On the other hand, the bigotry of sectarianism could hold that one universally applicable scheme might be devised, even by one man and certainly by a minority, however small. Every operation, every mechanical appliance, every germ discovered, every case carefully studied by an impartial student, has forced the realization that medicine must be broadly catholic and yet that mere majority opinion or authoritative utterance could not be considered infallible. Thus, every conscientious, intelligent physician has been led to recognize his fellowship with every other.

Again, the very fact of recognizing three schools of medicine has inevitably tended to bring about either actual unity or medical anarchy. As a permanent matter, there can no more be three schools of medical practice than of legal practice. If there is no one organization which is supreme and if two methods can secure legal recognition, any other method which can secure sufficient influence to be counted at all, can also, logically, in accordance with the spirit of the American government, secure equal recognition. As a matter of fact, Christian Science, Osteopathy and Optometry, have been dangerously near securing such recognition and, under the tacit implication of the tripartite system, not only these but any other cult of medicine must ultimately be recognized.

From the recognition of many schools of medicine, it is only a step to the old régime of free medicine, when any man or woman could hold himself or herself out as a practitioner.

We must not forget that, considered as a temporary expedient, the tripartite system has accomplished wonders in a transition period in medicine. It has more than doubled both the general and the technical education required of licentiates in medicine. So far as minimum requirements are concerned, it has done more than this. Up to about 1890, a man could engage in medical study if he were just above the state of illiteracy, he could graduate in medicine after about ten months' attendance on lectures, covering a total period of about 17 months, and with practically no laboratory or bedside instruction. He now must have a high school education, and, with reasonably long vacations, must apply himself to actual medical study of satisfactory kind, for a period of about three years and eight months. In addition, instead of a virtual inclusion of license with the medical degree, he must be subjected to a test which has actually excluded about 10 per cent. of all applicants.

Further than this, the New York law has afforded a practical precedent for other states which have, indeed, in many instances, not only profited by the excellencies of this law but have corrected some of its faults. At the beginning the majority of medical schools yielded rather reluctantly to the requirements of the law. Since that time, many weak schools have been forced out of existence and almost all of the extant schools loyally support the spirit of the law and ask for greater support in establishing higher standards. Indirectly, many evils connected with medical teaching, hospitals, dispensaries, etc., have been rectified.

Indeed, we question whether any compromise measure, confessedly far from perfect and urged as a matter of immediate expediency, has ever yielded such widespread benefits.

It should be fully comprehended that if the present bill passes, medical unity will not have been accomplished in the sense of driving all sectarians back into one catholic fold. The united profession will not possess the power of compelling allegiance to any one standard of practice nor even to the standard of ethics that is ideal. The so-called old school of practice has not for generations, pretended to compel adherence to any central authority nor to dictate even the decision of the majority as the practice of the individual. The individual has always been truly eclectic within the period of modern history. Still, the out-and-out sectarian, who has chosen to abide more or less difinitely by one method of practice, has practically been excluded from the fold. So, too, the man who has departed openly from the ethical standards of the profession has been ostracized.

It must be clearly foreseen that the professional unity exemplified in the present bill does not contemplate the conversion of the sectarian nor of the unethical practitioner. It does not force all physicians into one mode of thinking and of practicing. Something must be sacrificed of ideal conceptions of unity and professional conduct, but, as a recompense, all physicians who have attained a reasonable standard of competency will be placed, not only on the same level, but in the same category in the eye of the law. We believe that no risk of degrading the profession will be incurred, since over 90 per cent. are already in accord as to major points of the science and art of medicine and 95 per cent. in regard to matters of ethics. The preponderance of opinion in the former case is sufficient guaranty against the internal disruption of the principles of medical science and art, and, instead of the 5 per cent. lowering the professional standards of the whole, the influence of the 95 per cent. will be far greater than at present in elevating those who would reduce medicine to a commercial basis.

The unified standard of medical practice will also be an almost impregnable fortification against the insidious attempts of fanatics, charlatans and ignorant pretenders to receive legal recognition as practitioners. It will remove the specious argument of "fairness," it will establish the healing art as a unity of conception and yet with ample provision for individual freedom, even to degrees not sanctioned by conservative medical opinion.

No man, however base and eccentric in his notions, can be quite so dangerous either to the profession or to the community at large, if liberally educated and trained in medical science. Nor can he exert the influence for evil as an individual member of the profession, held in disfavor by the vast majority of his fellows, but with no actual restriction of his freedom of thought and action, that he can as a member of a martyred sect of cranks, whether his particular brand is more or less permanently excluded from legal recognition or is grudgingly acknowledged as a separate branch of the healing art.

The bill under consideration contains what is conceded to be the best definition of practice of medicine ever legally stated and this definition, if sanctioned by the passage of the bill, will once and for all time do away with all court rulings that have more or less supported the conception of methods of practice of the healing art that are not "medical."

7. "A person practices medicine within the meaning of this act, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate, or prescribe for any human disease, pain, injury, or deformity, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity." The exception referred to applies solely to emergency aid and domestic attendance, and "to the practice of the religious tenets of any church." This last leaves a loophole for Christian Scientists and certain analogous practitioners, though obviously suggested by ritual circumcision.

The bill gets around the difficulty of meeting the requirements of various therapeutic systems extant or conceivable, in what seems to us a unique and ingeniously simple way. The candidate is required to pass an examination in anatomy, physiology, chemistry, pathology, etc., even surgery, obstetrics, gynæcology and diagnosis, but therapeutics of any kind is absolutely omitted. This is certainly Hamlet with the part of Hamlet omitted, and most of us would confess that we never should have thought of this means of cutting the Gordian knot and yet we can readily appreciate the fact that no examination in therapeutics can actually test the practical ability of a candidate and that there would not be one chance in a hundred that he could pass satisfactorily on all the various branches specified and fail signally on this one. Whoever devised this wonderfully simple and satisfactory scheme of eliminating the multiplicity of examining boards, certainly deserves the gratitude not only of the medical profession but of the community.

Some minor defects in the bill are apparent; even its English is not unimpeachable. But the present is no time to point out defects nor to suggest amendments. At the time of writing an insidiously worded bill to recognize osteopathy has passed the senate. The time for the adjournment of the legislature is near. Without radical legislation in the future, the present bill, if passed, will effectually bar the admission to the privileges of practice of the various superficial and fanatic sects. Even well meant and proper criticism of the present bill will, almost beyond doubt, prevent its passage at the present time. Once passed, those who have at heart the welfare not only of the medical profession but the health and life of the community, may breathe freely and such minor defects as may be found may be repaired at leisure.

The issue is one of more than local interest. Many states (37, we believe) have established single examining boards. None have recognized the essential unity and influence of the medical profession so clearly as will New York if the present bill becomes a law. We are on the rising tide of professional organization and professional influence and, if we take the tide at its flood, it will sweep away all serious opposition to medical solidarity and, during the ebb, if ebb there be, there will remain no more strenuous task than the clearing away of débris.

A. L. Benedict, A.M., M.D.

RETROSPECTIVE THERAPEUTICS

The open treatment of burns is advocated by H. Sneve (*Jour. A. M. A.*, July 1, '05), who eschews occlusive dressings and relies on asepsis and perfect drainage. The dangers in extensive burns are: shock; toxæmia; loss of function of absent skin covering; exhaustion. For shock, adrenalin is advised, carefully administered, to combat the vasomotor paresis; whiskey, morphine, strychnine and the like are warned against as poisons to the susceptible and already overburdened nervous system. (Why morphine?) Sneve would treat symptomatically. To drive the blood from the abdomen, drinks and enemata of cold normal saline solution; the hands and feet should be chafed and local warmth applied to the extremeties and to the nape of the neck. There should be a hot bath to meet the subnormal bodily temperature. The temperature of the room should he high. Hypodermoclysis (or saline infusion) may be necessary to give the heart more fluid to work upon. Sneve believes that toxæmia is directly favored by occlusive dressings, which retain the discharges and prevent perfect drainage; to this factor he attributes many sudden deaths. The dangers of an infection are negligible; the surface is at first well sterilized by heat, and later the granulations and crusts protect against invasion. The functional activity of the uninjured skin is also of the greatest importance; cold sponging and frictions are indicated to this end. Artificial heat should also be supplied during the first few weeks of a severe burn. For burns of a third degree there should be skin grafting. The diet should be nourishing. The measures in general should be supporting. Control the pain with morphine, if necessary (he finds there is little pain with this open method of treatment). The resulting cicatrices are smooth, flexible and skin-like. Everything should be kept from contact with the burned areas. No strong antiseptic should be used. All blisters should be cut away. Cleansing should be by normal salt solution. All second degree burns should be dried and dressed with stearate of zinc; all serous exudate should be wiped away until dry, brown adherent crusts are formed. All third degree burns should be exposed without powder and kept clean until granulations are ready for skin grafting. (We would note that if animals are bandaged after a wound they will do the best they can to tear away the bandage, if it is possible for them to do so; here one may perhaps find a hint from nature corroborative of the measures which Dr. Sneve advocates.)

In treating shock, Keen (*Therap. Gaz.*, Dec. 15, '05) has practically given up strychnine and uses in its stead adrenalin. Montgomery, after a preliminary dose of strychnine, finds a preparation of aseptic ergot effective, in which, next to intravenous injection of salt solution, he places most reliance. Martin prefers adrenalin chlorid in extreme dilution (1 to 20.000 normal salt solution), which is allowed to flow slowly into a vein. The effects are, however, transitory; and a repeated dose is generally necessary, from twelve to twenty-four hours after. A cannula may be left in the vein for this purpose. Da Costa would give adrenalin intravenously with salt solution, very slowly and gradually for a considerable time. Rodman would use only oxygen in mild cases due to anæsthesia and the operation combined; there should also be artificial heat with a decided lowering of the head. In moderately severe cases with one or two degrees subnormal temperature, but without great cardiac and respiratory involvement, enemata of hot coffee and whiskey or enterocylsis of hot saline solution, in adition to position and artificial heat, will generally suffice. If there be pain, a cold, clammy sweat and 96° or below, 1-6 grain morphine with 1-150 of atrophine should be injected. Hypodermoclysis may be used in conjunction with enteroclysis or substituted for it. A pulse which is short and jerky, above 130 and of poor volume, requires intravenous infusion of adrenalin chloride. Laplace sets the utmost value upon strychnine as a heart tonic; but it is not useful when the circulation is too weak to have it produce a stimulating effect. It is the best agent for reducing shock to a minimum during an operation.

A Manitoba health resort has been erected, states the *New York Medical Journal,* as the result of a meeting of Canadian physicians, in Winnipeg. This resort, "complete in every particular," will be situated upon the banks of the Assiniboine River, some eight miles from Holland. The preliminary cost is estimated at $100,000; the buildings will at first accommodate 100. Dr. Chown is the president of the Association, and Dr. Simpson, Dr. McDonald and Dr. Bell are also prominent in the movement. The situation is ideal for such an institution. It is in the heart of the sand hills, where there is always a clear and dry atmosphere. The buildings would be surrounded by a beautiful grove of spruce trees, while the land can, for a very small cost, be turned into a splendid park, with excellent opportunities for all kinds of recreation. The scenery is magnificent. The Assiniboine affords every facility for boating and fishing, while in the new district are the rolling Tiger Hills. It will be all very beautiful, evidently; but (to paraphrase a popular expression) we judge that the patient without a long purse had best not make application.

The treatment of leg ulcers, if carried out successfully, especially by the youthful physician at the beginning of his practice, will certainly increase in no small degree both his reputation and income. These are cases that often do badly through poor management and lack of persistent effort. They will generally get well by means of skillful and patient work on the part of the young surgeon, who will thus certainly earn the patient's gratitude. The cause must be sought. If this be tuberculous, diabetic or syphilitic, constitutional must accompany local treatment. The general nutrition must in all cases be looked after; anything obstructing the venous flow, such as constipation, must be corrected. The leg must be made surgically clean by means of sinol soap, followed by irrigation with Thiersch's solution. The foot should be elevated, preferably in bed, throughout the whole course of the treatment. The limb should be firmly bandaged *from the toes to the knee.* If possible varicose veins should be excised. Unhealthy or sluggish granulations should be thoroughly curetted, irrigated with Theirsch solution and dressed daily with a hot Thiersch pack. When the surface presents granulations, applications of bovinine pure should be made, about three times in the twenty-four hours. (Ryle, in *The Medical Fortnightly.*) Removal of sluggish granulations is very essential to cure.

Digitalis and Valvular Disease.—This drug, declares Goepp (*Amer. Med.*, Sept. 23, '05) acts on the vagus, the nerve endings, the myocardial fibres and on

the vasomotor centres. It lessens the number of beats, increases the length of diastole, strengthens the muscular contractions and causes a rise of arterial tension. Thus the amount of work done is increased, and the time during which the ventricles dilate is lengthened. A difficulty encountered is the antagonism between the action of this drug on the peripheral vessels and its effect on the central muscles. As soon as compensation is effected it should be discontinued; it may harm by overstimulating an already hypertrophied organ. One must distinguish between actual and functional hypertrophy. There are contraindications to the use of digitalis—hypertrophy with established compensation, fatty degeneration of the myocardium and high arterial tension. Goepp believes digitalis has no cumulative effect.

The administration of medicines at night is sometimes a matter requiring delicate adjustment: whether to awaken the patient from time to time for medication, or whether to let him enjoy sleep (generally speaking, the best of all medicines), must oftentimes be decided. R. Lanfer (*Bull. general de therap.,* Jan. 23, '06) finds that not only are the bodily functions modified, but that the course of disease is also affected at night. Some maladies are accentuated, as asthma; others are worse, as syphilitic neuralgias; others may give more pain at night, as acute articular rheumatism. A nocturnal therapeusis may therefore be in order. Fifteen grains of potassium iodide at bedtime may prevent asthmatic attacks, such as frequently occur between midnight and 3 a.m. The bromides (in milk) at eleven and at one in the morning may obviate nocturnal epilepsy. In a case of acute rheumatism, sodium salicylate given at midnight, at 3 and at 6 a.m. materially hastened the cure. In whooping cough, bronchitis, enteritis, and many other diseases, remedies are more effective at night because absorption is probably more rapid and elimination is on the contrary less active. It is also probable that the toxicity of remedies is greater at night when the alimentary tract is comparatively empty.

Tuberculosis in the lymph nodes has been studied extensively by F. Horbitz (*Jour. Infect. Dis.,* March 1, 1905). He finds primary tuberculosis of these glands quite frequent in adults, especially in the neck, and oftentimes in the abdomen. It often extends from place to place over a number of years and finally attacks the lymph node system. Pulmonary tuberculosis may be secondary in adults, the primary forms being in the other organs, and the infection occurring by way of the blood. (Here Horbitz agrees with many other students of the disease, some of whom declare, indeed, that the pulmonary type of the disease is almost never primary.) Primary infection may occur through the digestive tract and the throat, and more stress must be laid upon this than has formerly been done. Tuberculous infection in children, as well as in adults, is associated with local changes in the corresponding lymph nodes, and extensive dissemination may take place in various organs rapidly through the circulation, the local lesion being at the same time inconspicuous.

The diameters of the normal and the phthisical chest are compared in an important paper by W. A. Besseson (*Jour. A. M. A.,* Dec. 30, '05). The use of bony landmarks for locating chest diameters is accurate and easily applied. The use of median values for evaluating anthropometric data saves time and the results are more accurate than the arithmetrical average. Important points in the shape of the chest, as well as the movements and capacity, may be appreciated by observation of its principal diameters. The development of the human chest passes through various stages from the deep or dorsoneutral to the broad or transverse type. In the fœtus and infant the lower plane gives a greater depth and breadth than the mid-plane. The fœtus under 30 centimetres in length presents a dorsoneutral type of chest (it is deep chested). The new-born infant represents the transitional type (it is round chested). During the first five years of life the most notable change is the rapid widening of the chest in its transverse diameter (it becomes broad chested). At puberty the chest takes on an increase in length over the diameters (the adolescent becomes long chested). From eighteen to twenty-five the development of the chest is fairly uniform in all dimensions and represents the highest development (the broad long chest). The dorsoneutral diameter increases at an even rate from birth to maturity. The adult phthisical chest generally shows an arrest in development of the transverse diameter following puberty. The phthisical chest is a narrow one, tending to the rounded form, with a relative elongation.

The linen handkerchief, declares Dr. L. A. Berkan (*Med. Rec.*), is quite a dangerous bacteria carrier and preserver, chiefly on account of being stored in the depth of a pocket where a mild temperature, humidity, and seclusion of air and light contribute to the increase and spread of germs, such as those of pneumonia, tuberculosis, their frequent precurser, influenza and cerebro-spinal meningitis. The Japanese, who use paper handkerchiefs which are immediately thrown away, criticize our habit of using linen as uncleanly, thus preserving, as we do, our excretions. Still it would be awkward for the victim of catarrh to be carrying about several dozen paper handkerchiefs. Besides, what would the Health Department say if these papers containing excreta were distributed about the streets? As a matter of fact, those whose upper air passages are normal seldom need a handkerchief; witness the six-inch square contrivances which our gentlewomen carry, generally for ornament, almost never for use.

Intermittent Exophthalmos.—An interesting case is reported by E. M. Alger. An Italian woman aged 34 years developed exophthalmos suddenly while bending over to put on her shoe. She had nausea and vomiting, but the eye returned to its normal sight with vision unimpaired. Thereafter when in a similar position the accident would occur; but the eye would replace itself when she straightened up. In one attack ice was applied, whereupon blindness supervened; whether this was due to the applications could not be determined. Alger considers the subject carefully, and gives a bibliography. True intermittent exophthalmos is rare. Owing to changes in the orbital veins one eye is pushed forward to a greater or less degree out of the orbit into which it recedes again as soon as the venous pressure becomes normal, the process of recession being greatly facilitated by pressure on the eyeball in front. As possible causes of the orbital venous congestion are any factors obstructing return circulation and a weakness

of the wall of the vein, which might be either congenital or the result of disease. The treatment is largely palliative. Patients should avoid constricting neckwear, severe exertion and postures tending to cause congestion of the head. A snug bandage may be worn several hours daily. If vision is failing and the attack does not subside speedily, exploratory incision into the orbit may reveal a clot or a varix. Palpation may locate the latter, and the former may be suggested by the regular symptoms of retrobulbar hœmorrhage.

Kidney Surgery and the Utility of Diagnostic Aids are exhaustively considered by Chetwood, who makes some very important deductions: (1) In profuse suppuration or multiple abscess of either kidney, the question arises whether nephrotomy or nephrectomy should be primarily resorted to; this question can be decided only upon the merits of each case involved. (2) A very small remnant of kidney structure may perform a certain amount of renal function; primary nephrotomy and drainage will often give time to decide this question; some patients may sustain a secondary better than a primary nephrectomy. (3) General systemic infection is an indication for both primary and secondary nephrectomy. (4) As to lithiasis—the same rules may be applied in the treatment of the kidney itself as one employed in suppuration without renal calculi. (5) Nephrotomy is the operation indicated in aseptic lithiasis. (6) In renal tuberculosis the only resort, even when there is a vesical and pulmonary involvement, is nephrectomy, when the integrity of the opposite kidney is established. (7) In urogenital tuberculosis removal of the primary focus, which is frequently in the kidney, is likely to exercise an inhibitory influence upon the distal implication—as, for instance, vesical involvement. (8) In subcutaneous injury to the kidney, where there is evidence of a peri-renal tumor with hematuria, immediate exploratory incision with suture and temponade (when possible) should be done. (9) Total nephrectomy may be necessary where the vessels or ureter have been ruptured and the laceration of the kidney is extensive, or where there is beginning or progressed suppuration. (10) Most authors favor conservative operation; and symptomatic treatment is considered favorable in mild cases. (11) One should resort to exploratory incision in all doubtful cases and should extirpate only when necessary. (12) Too much stress cannot be laid upon the importance of the refinement of diagnosis and the advantage of having recourse to the most improved methods of investigation.

Hyperchlorhydria is present in one-half the cases of digestive disturbances, declares Lichty (*Am. Med.*, Oct. 28, '05). With this condition are oftentimes associated hysteria, melancholia and hypochondriasis, some of the organic nervous diseases, (such as tabes), gastric ulcer and diseases of the gall bladder and bile ducts. The anatomical lesions in this aberration of secretion are not constant, varying from no change whatever to a proliferation of the glandular elements. Lichty maintains that hyperchlorhydria proper is always associated with a neurotic condition; and that where there is a hyperacidity and no associated neurotic condition the earliest stage of chronic gastritis is to be dealt with. Recovery follows rapidly upon prompt and proper treatment. Hyperacidity is a frequent condition. Hyperchlorhydria is difficult to diagnose; an analysis of the stomach contents is here essential and the diagnosis must often be withheld until the course of the condition can be observed. The treatment must be persistent. The prognosis is good with regard to relief of symptoms; so far as overcoming the acidity is concerned, it is unfavorable.

Housing and tuberculosis has received attention by Noir (*La Trib. Med.*, Nov. 18, '05). In a corner of old Paris occupied by paupers there are in seventeen streets two hundred and fifty-one houses, most of which were built before the eighteenth century. Their unhygienic condition is notorious. They are five or six stories high. In three-quarters of the cases each family has but one room which is a combined work, dining and bed room, a kitchen and sometimes even an infirmary. In eleven years 105 persons have died of contagious diseases and seven times that number of tuberculosis. Noir demands the destruction of these unhygienic structures and the substitution of light and airy houses for them.

A case of food poisoning is narrated by Kennard (*Brit. Med. Jour.*, Jan. 13, '06), who saw the patient the morning after a hearty supper of fish, meat, wine and ice cream. He had been all night in a state of coma, with stertor, absence of all reflexes, contracted pupils, weak and rapid pulse, normal temperature and distended bladder. He was catheterized and purged. In about four hours he vomited freely and his reflexes gradually returned. A mild broncho-pneumonia followed, but health was fully restored in ten days.

The "Home Sanatorium" is the subject of an excellent paper by J. H. Pratt (*Bost. Med. and Surg. Jour.*, Feb. 22, '06), who would carry out the regulations essential to the sanitorium life in the homes of the poor in a crowded city. The usual tuberculosis dispensary, he declares, gives a little time to a great many patients; he would give a large amount of care to a few. To this end he has organized a "tuberculosis class" in a Boston church, which finances the plan. Strict discipline is maintained, and every detail of the patient's daily life is supervised. A nurse visits the class members, who are not accepted until either tuberculin or sputum examination has established the clinical diagnosis. Admission has not been restricted to incipient cases. The applicant must promise to give up all work, live outdoors, and obey all the rules. A nominal fee of two dollars per month is required. Dr. Pratt's plan is feasible in any community; details of his treatment are given in his paper.

In earache the patient should be kept quiet, put to bed, placed on a fluid diet, and treated as one would a patient with a high fever, states Bardes (*Med. Rec.*, Jan. 20, '06). The bowels must be kept open; a single dose of morphine may be given to insure rest and comfort; either dry heat or an icebag should be applied to the ear (the former is preferred by most patients). Every three hours the ear should be gently irrigated with bichloride (1-5.000); following this a few drops of a 12 per cent. solution of carbo-glycerine can be instilled. The pain should certainly not continue beyond twenty-four hours. If it persists and the drumhead is inflamed and distended, palliative measures are much worse than useless. Surgery is then imperative; there should be free incision rather than simple puncture.

Smallpox an Expensive Disease.—The New York *Medical Journal* comments upon the comparative cost of smallpox and that of its prevention. Outside the cities and boroughs, it costs the State of Pennsylvania, at the lowest estimate, $350 for each individual quarantined to prevent the spread of the disease. The 5,841 cases which occurred in the country districts of this commonwealth cost, therefore, more than $2,000.000. In the little mountain township of Dunbar $5,000 was spent in the suppression of smallpox in one year, which represented a tax of $314 on every man, woman and child in that community. To this should be added the serious money loss involved in the interruption of traffic and travel, and the greatest loss of all—that of 446 of the inhabitants.

Thorough vaccination would remove the disease and all the distress and loss attendant upon it. Dr. Dixon, the commissioner of health of the State of Pennsylvania, reported: "Recently it cost Williamsport $284 for each one of eighteen persons who had smallpox, making in all $5,132. On the other hand, 3,499 persons were vaccinated at a cost of twenty-nine cents each. Every successful vaccination prevented one possible case of smallpox, which means that a possible expenditure of $284 was saved by an expenditure of twenty-nine cents." In Shenandoah, after smallpox had prevailed as an epidemic for seven months, the authorities, becoming alarmed at the expense, enforced compulsory vaccination. "The result was an abrupt cessation of the epidemic, and in four weeks they were able to close their smallpox hospital."

A case of thoracic aneurism is reported by Collet and Gruber (*Lyon Medical,* Dec. 31, '05). A man of 73 years presented signs of broncho-pneumonia and rather obscure cardiac symptoms. He died suddenly. On autopsy an aneurism of the lower part of the thoracic aorta as large as a fist was found. It occupied the space between the sixth and twelfth dorsal vertebra and terminated two or three centimetres above the origin of the cardiac axis. Its cavity was almost wholly filled by a large firm clot, which was very adherent to the wall.

Tuberculous Bronchial Glands in Children are considered by Thompson (*London Hosp. Gaz.*, Dec., '05), who finds that of fifty cases of fatal general tuberculosis, 78 per cent. showed the oldest lesion to be in these glands, while in not a single case were the cervical glands the cause of the fatal result. Early diagnosis of this condition is, therefore, of the utmost importance. There is emaciation, languor and evening temperature, with fatigue. The enlarged glands may press upon the blood-vessels, the nerves and the air passages; such pressure may cause pain behind the first bone of the sternum; that on the nerves causes paroxysmal cough; that on the veins may induce lividity of the skin above the clavicle, with nervous engorgement over the front of the chest; that on the trachea and large bronchi may induce dyspnœic attacks. The physical signs are dulness behind the manubrium, marked tracheal breathing over the sternum conducted to the surface by the enlarged glands, and a continuous venous hum produced by pressure on the large veins. The X-ray may be of value in diagnosis. The prognosis is not unfavorable if the case be taken early in hand. Treatment: change of climate as early as possible; diet should be rich in fats and proteids; cod liver oil and iodide of iron may be tried; iodine may be painted over the manubrium, and mercurial inunctions made at night into the axillæ.

Atoms, Electrons and Ions are terms well defined by Prof. Soddy (*Scientific American*): The first and oldest conception of the ultimate union of matter is the *atom,* the smallest particle of an element capable of separate existence. The essential feature of Dalton's conception was that the atoms of the same element are all exactly alike in mass and every other property, but are recognizably different from the atoms of every other kind of element. Text-books of chemistry, written long before the recent discoveries were foreshadowed, stated that if it is ever found possible to transmute any one kind of atom (elemental matter) into any other kind, there is little doubt that the same means would be sufficient to transmute or decompose the other elements. The modern conception of the ultimate union is the *electron;* and this, although by origin an electrical conception, is in reality a material conception no less than the atom of matter. The electron could be defined as the smallest existence known capable of isolation and of free movement through space. It is a definite amount or "charge" of negative electricity—the smallest possible amount known to exist; for electricity, no less than matter, has been shown to consist of discrete particles or units, and not to occupy space continuously. Unlike the atoms of matter only one kind of electron is known, consisting of the same amount or charge of negative electricity with identical properties in all its various manifestations. Each atom of matter contains in the normal condition at least one electron, which it is capable of losing, and conversely that it may unite with at least one electron more than it normally possesses without deep-seated material change. An atom with one or more electrons less than it possesses in the normal state is positively charged and is called a positive *ion;* an atom with one or more electrons in excess is a negative *ion.*

Dr. Robert Ogden Doremus died recently in New York City. His career was an inspiring and a suggestive one for the physicians to contemplate. His family is one of the oldest in New York, dating back to Anneke Jans in 1643. He was born on Bowling Green more than eighty years ago. After graduation from the New York University, he became assistant to Dr. Draper and at the same time continued his medical studies in the office of the then celebrated surgeon, Dr. Abraham L. Cox. In 1847 he visited the leading laboratories and chemical factories in Europe in the guise of a workingman; and in 1849 he introduced a chemical laboratory in the Free Academy, which afterward became the College of the City of New York. He retained his professorship of chemistry in this college for more than fifty years, and taught more than 50,000 students. Since 1861 he has held a similar post in the Bellevue Hospital Medical College. He was a great experimenter, though he was greatly handicapped by having only one arm. He was one of the most brilliant scientific lecturers in his day; and was in manifold ways an exceedingly popular man. He was a great lover of music and was one of the founders of the Philharmonic Society, which had charge of the music at his funeral. He himself played the cornet with no small skill. He was a member of many clubs; and he and Mrs. Doremus were thirty years ago leaders of New York society.

MISCELLANY

The new Virchow Hospital in Berlin, it is stated, will have 800 beds; its total cost will reach five millions of dollars. We read, *mirabile dictu,* that the attending physicians will have annual salaries.

The "red bug disease" has been studied by Dr. L. Sells, as it appears in Panama. This microscopic object burrows under the skin, and causes an irritation, and is believed in some cases to have led to insanity.

A medical social settlement has been established as a philanthropic move in one of the most congested districts of the West Side, under the auspices of the Chicago Tuberculosis Institute. Dr. Arnold C. Klebs originated the idea.

After incision of a large furuncle, states our indispensable contemporary, *The International Journal of Surgery,* the wound should not be packed with dry gauze, since this is apt to interfere with drainage, and its removal causes great pain.

The harmfulness of beer and tea are compared by an English physician, a man, we suspect, of some experience. He believes that the moderate use of the former is less harmful than that of tea; and that immoderate tea-drinking causes more pain, suffering, ill-health, and nervous breakdown than the excessive consumption of beer.

Rachitis, states King (*Jour. A. M. A.,* Apr. 7, '06), is entirely preventable and should not be associated with mollitis osseum; the processes are entirely different, one being the destruction, the other non-formation, of bone. In the pathology we find interrupted nutrition both in and outside of the child; the malassimilation produces permanent alterations.

A Liquor Tax on Medicines has been imposed by a Connecticut law. All venders of patent medicines which contain a considerable percentage of alcohol have now a heavy license to pay—$25, as for retail liquor dealers. The county commissioners of the state have decided in addition that where a government license is required, a state license must also be taken out, necessitating an annual increased expense of from $250 to $500, acording to the population of the town.

Balsam of Peru and Castor Oil are very useful in surgery, as a dressing for felons, paronychia, deep burns, abscess cavities, tuberculous glands, and the like; the proportion is half a dram of the oil to one ounce of the oil. The smell of iodoform in this invaluable mixture is disguised up to the strength of ten grains to the ounce. Hubbard (*N. Y. Med. Jour.,* Mch. 10, '06) finds this balsam-oil mixture of no value in eczema and not a protection against erysipelatous infection.

Camphor and Phenol make, with the addition of absolute alcohol, a permanent solution of oily consistency, not caustic and without the odor of phenol. It will keep indefinitely in well-stoppered bottles; but exposed to the air the camphor gradually escapes and the solution becomes more and more caustic. It is used as a dressing for infected wounds, and as an application to erysipelas. It may (*Med. Bul.*) be simply brushed over the surface or applied on a layer of absorbent cotton, covered with gauze, and changed twice daily. The proportions are: Acid carbol. pur., 30 parts; camphor, 60 parts; absolute alcohol, 10 parts.

American nurses were greatly and justly praised by Professor Lorenz, who declared that never until he crossed the Atlantic had he known what a woman could be in the way of a nurse. "In Austria they are women of little education. Here in America they are ladies. Never have I been so amazed. They are in aprons and caps, but they are educated, they are refined, they are charming. Never have I seen such a thing—never!" We infer that in Austria no lady ever wears an apron or a cap.

The subway roadbed is in a filthy condition, at the stations at any rate. It is well recommended that remedial measures be taken. The roadbed should not originally have been covered with broken stone, which cannot be properly cleansed and which aids materially the natural subway conditions (darkness and the lack of fresh air and sunshine), in making the subway an excellent medium for germ propagation. A solid sheet of asphalt would have been much better —ideal, in fact; for it could have been thoroughly cleaned as often as necessary. Such a covering for the roadbed may indeed become an imperative necessity.

Ostwald on Football.—The famous German professor, on returning to Leipsig, after having delivered a course of lectures at Harvard, stated his impression that the personal interest of the students, next to their studies, is concentrated alone on sport, which "draws their attention altogether from intellectual or æsthetic pursuits. In the course of a single semester nineteen students fell victims to enraged brutal handling. At every American university is a sort of open amphitheater in which many thousands of spectators view the periodic football battles." An accurate and just observer is Professor Ostwald.

The new St. Francis Hospital, a splendid structure situated at St. Ann's Avenue and 142d Street, in New York City, was opened on March 1. It is conducted by the Sisters of the Poor of St. Francis, an order founded at Aix-la-Chapelle in 1845 by the late Mother Frances Schervier. It was in 1865 that the old hospital in Sixth Street was established. Since its very modest beginning (two dwelling houses) it has been maintained by the good women of this order in a manner so self-abnegating and altruistic that one is touched by the contemplation of their work. It is to be hoped that this beneficient institution may be continued through many generations.

The tyranny of fashion has been defied, so we learn, by the physicians of Rio de Janeiro. At a meeting of the "Club Medico" it was resolved that hereafter the medical men of the Brazilian capital should wear light white attire during the hot weather. (Our winter is the Brazilian summer). Theretofore no doctor could, it seems, without risking his reputation and practice, go about without a weighty black suit, a black cravat and a silk hat. The reform movement was really instituted by the German Ambassador, who sensibly adapted his attire to the weather. At first he was called a crank; but gradually it occurred to others that he was not such a fool as he looked; gradually his example was followed until the medicos adopted it. The best fashion is that which adapts the apparel to the season; they are beginning to understand that now, even in London, which is primitive in its conservatism.

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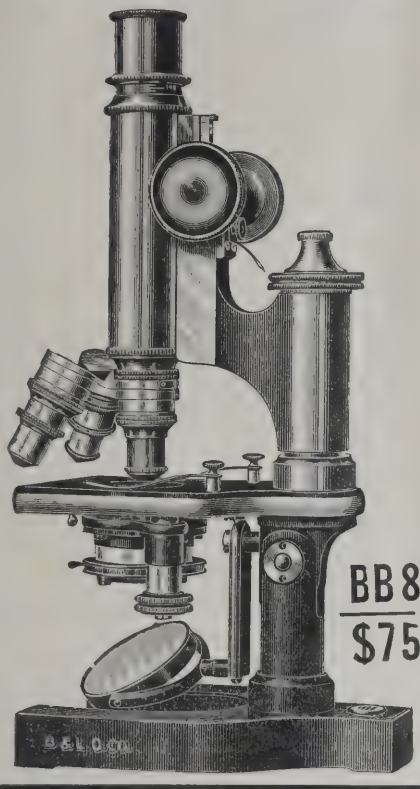

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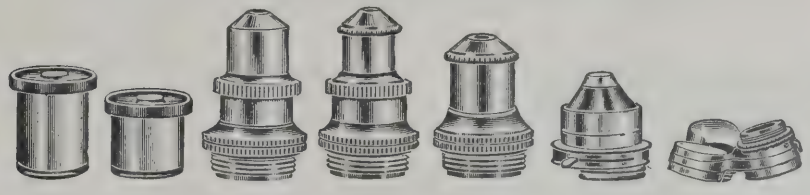

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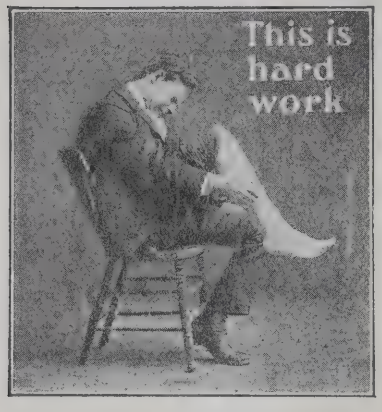

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"A Dundee physician, because the teetotaler had a red nose, suspected the sincerity of the man's professions.

"So he invited him to dine at a restaurant one night, and ordered champagne with the dinner.

"The teetotaler did not hesitate at all over the champagne. He drank half a dozen glasses, and grew gay and boisterous.

"Then the doctor, feeling that he had him, said gruffly:

"'Weel, John, hoo does all this square wi' yer teetotal pretensions?'

"The prohibitionist (as you would call him here) laughed and answered:

"'Though I'm a stanch teetotaler, I'm no sic a fule as to refuse what the doctor orders.'"

Dr. Frank Allport says he has seen surprising results from Unguentum Credé in dangerously infected eyes, where suppuration has perhaps already been firmly established. He places a thick plaster of the ointment upon a piece of gauze directly over the closed lids, secured by a soft bandage.

Individuals with bluish sclerotics, and with dark lanugo over the upper part of the back are usually of tuberculosis diathesis; and these signs are not inconsequential in making a diagnosis.

Dietary Standards. Accepting the daily dietary standards previously enumerated, and which are based upon observations as to what people are accustomed to consume, it is plain that the average man doing from light to moderate muscular work must take each day approximately 116 grams of proteid matter (18 grams of nitrogen), with sufficient fat and carbohydrate to yield a total fuel value of 3050 large calories. The usual proportion of carbohydrate (mostly starchy food) is about 500 grams to 50-60 grams of fat. In other words, the average man needs, according to the above hypothesis, approximately 120 grams of proteid, 500 grams of carbohydrate and 60 grams of fat for his daily ration. In order to obtain these amounts of nutrients he would require, per day, three-fourths of a pound of ordinary roast beef, one pound of boiled potatoes, one-half pound of white bread and one-fourth of a pound of butter. Naturally, much greater variety of food might be adopted with the same nutritive values as the above; but these figures will suffice to give some impression of the quantities of ordinary cooked foodstuffs required to yield the nitrogen and the total fuel value called for by the above standard dietary. A more elaborate diet, one in large measure free from meat and having essentially the same content of nitrogen, and with a total fuel value of approximately 3000 calories, would be as follows: Fried hominy, six ounces; syrup, three ounces; baked potato, eight ounces; fried bacon, one ounce; fruit jam, four ounces; ghetti, ten ounces; mashed potato, ten ounces; boiled turnip, six ounces; bread, two ounces; apple-sauce, eight ounces; apple-tapioca pudding, twelve ounces; fried sweet potato, eight ounces; butter, one and one-half ounces; baked spatoffee, one and one-half pints; and tea, three-fourths of a pint. Such a diet, owing to its vegetable nature and lack of concentration, is naturally quite voluminous. A greater concentration of diet is easily obtained by replacement of a portion of the vegetable matter by meat; and this the ordinary man, with his highly developed palate, usually prefers to do, because of the increased flavor which his acquired taste now calls for. Further, the resources at the command of the civilized man render possible great variety in matters of diet; but whatever the character of the daily food, or however great the number and variety of the ingredients, it will be found that the nitrogen content and fuel value of the daily food of mankind will in general correspond in large measure to the dietary standards usually adopted throughout the civilized world.

XXXVII

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Bronchitis in children is treated by Prof. Joseph E. Winters, of Cornell Medical College, as follows:

In severe cases the drug of unfailing, universal efficacy is aconite. The bronchial arteries, branches of the aorta, or intercostal arteries, subject to direct, immediate, forcible cardiac pressure, surge with blood. To restrain and limit this is the aim. Through this drug arterial pressure is promptly, safely circumscribed. Maximum, frequent doses during the first hours; diminished, less frequent doses after four or six hours; early abandonment. It should be given in water only—tasteless, non-nauseating, it does not affect appetite. For a child of one year—

℞ Tr. aconite (Fleming) ..... gtt. iv.
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M. Sig. One teaspoonful every fifteen minutes for one hour; every half hour for four or six hours; then every hour for twenty-four more hours.

Turgescence ceasing, the remedy is discontinued.

Arterial pressure is lessened by diaphoresis. Sweet spirits of niter is the pre-eminent diaphoretic. Niter, citrate of potassium, and spirits Mindererus may alone be used where aconite is not urgently indicated, and follows discontinuance of it. The combination often nauseates, and even more frequently affects the sense of taste so disagreeably that nourishment is persistently refused.

Intestinal elimination, diaphoresis, aconite, and niter make up the febrifuge measures. Other antifebriles (baths, sponging, coal-tar derivatives) are, individually and collectively, contraindicated.

Cold to the cutaneous capillaries is unphysiological, pernicious; conduces to extension.

Abrus Precatorius-Jequirity.—The use of this drug has been confined to the local treatment of the eye. De Wecker employed a 0.5 per cent. infusion freshly prepared, in the treatment of pannus, granular ophthalmia and trachoma. It was found useful in the later stages and had to be applied with caution. The remedy is most violent in its action and deserves careful investigation in smaller doses, internally. It should be tried in septicæmia, in suppuration of mucous membranes and of the glands; in corneal ulcers and in panophthalmitis; in chronic suppuration of the middle ear and in chronic metritis. The special indication for its application is the intensity of the symptoms, the disease being of a *violent* character. In some cases of blood poisoning, with suitable dosage, it must prove of great service. The proper place to test the drug in the manner indicated, is in the hospital service, where the effect can be carefully watched and noted.

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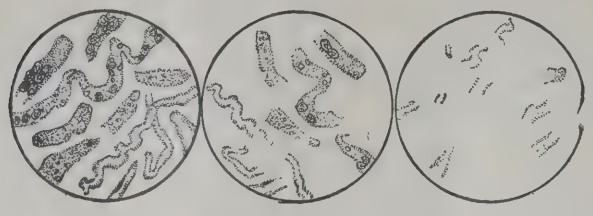

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Solomon Solis Cohen, M.D., writing on "Silver Therapy," says that the knowledge of the power of colloidal silver (collargol) in septic and septico-toxic conditions should be made more general. He has seen two recoveries from malignant endocarditis and numerous recoveries from other grave infections by its energetic employment intravenously and per rectum. Suppositories may be used instead of rectal injections, and they are especially available in children. An adult may be given 2 to 3 grs., a child 1 gr. in each suppository. Although the solution is itself antiseptic, no precaution should be neglected when intravenous injection is done. It is best to use an all-glass syringe with a platino-iridium needle and with a tight but smooth conical metal attachement between needle and syringe. The needle may be inserted into a superficial vein of the hand, forearm or flexure of the elbow after the vein has been made prominent by pressure above. When blood issues from the needle, the syringe is attached, pressure relaxed, and injection made. 15 to 60 min. of a 2 per cent. to 5 per cent. solutions may be lengthened.—Abstracted from the *St. Louis* One intravenous or two rectal injections daily usually suffice. As improvement follows, the intervals between injections may be lengthened.—Abstracted from the *St. Louis Med. Review.*

Treatment of Insomnia. C. L. Cook, of Clingman, N. C., relates in the *Medical World* (Feb., 1906), the case of a male, 65 years old, good habits all his life, uses tobacco, but not excessively, has no pain except rheumatism in his hip and shoulder occasionally. May be perfectly free from all pain on retiring, but can't sleep. He will get what he calls "the fidgets" and can't sleep a wink. The editor of the *Medical World*, appealed to for advice in the case, advises against morphine, and points out that veronal will give the patient sound and refreshing sleep, without subsequent nausea or deleterious effect, with no danger of inducing a habit, without baneful effect on any organ or function, and is easy of administration. He states that he knows from personal prescribing of veronal that it is superb where the trouble is simple insomnia, but it is useless in the presence of pain.

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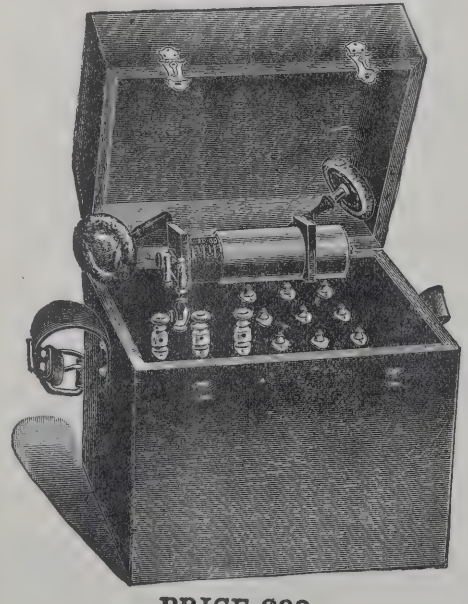

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The Fifty-seventh Annual Report of the Board of Trustees and Superintendent of the Central Indiana Hospital for Insane, Indianapolis, for the fiscal year ending October 31, 1905, has been received, and it contains much interesting information. Naturally, the pathologists' findings interested us most, especially that portion devoted to autopsies, of which many are given in detail. These reports will be found of service to all alienists, and no doubt a copy of this publication can be obtained for the asking. Dr. Geo. F. Edenharter, the superintendent, is to be congratulated for his excellent management.

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Just go.

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I buy my ticket and I go—
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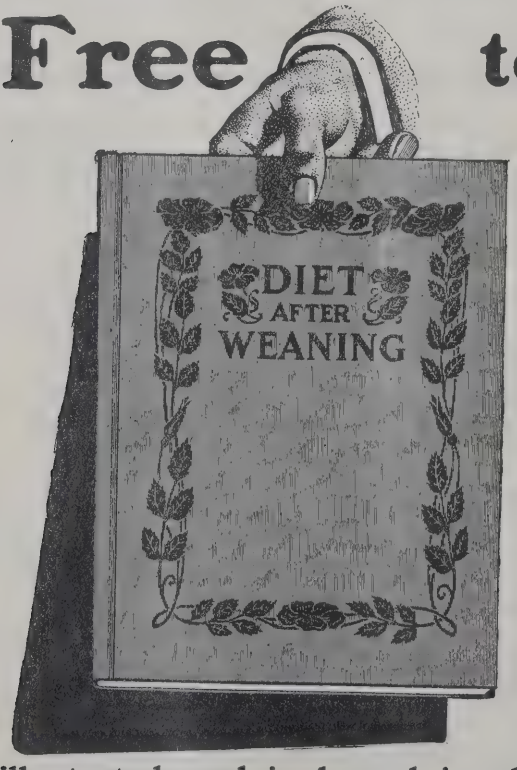

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Cresylone is especially designed for surgical use, and can be advantageously employed for a general disinfectant by dilution with water in a 2% solution. For the treatment of wounds a 1 to 2% solution should be utilized, and for internal irrigations we would recommend a 1-2% solution.
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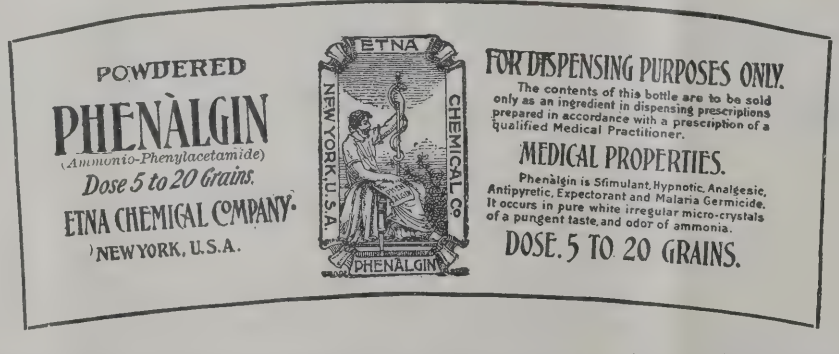
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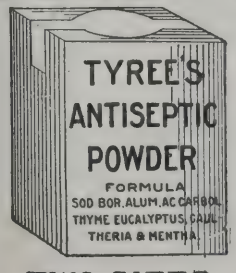

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And the Vitalizing Constituent—Phosphorus; the whole combined in the form of a Syrup with a Slightly Alkaline Reaction.

It Differs in its Effects from all Analogous Preparations; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has Gained a Wide Reputation, particularly in the treatment of Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic, and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt; it stimulates the appetite and the digestion, it promotes assimilation and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy, and removes depression and melancholy; hence the preparation is of great value in the treatment of mental and nervous affections. From the fact, also, that it exerts a tonic influence, and induces a healthy flow of the secretions, its use is indicated in a wide range of diseases.

This preparation can be procured at all chemists and druggists, everywhere.

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of your syringe into which you have drawn 5 or 10 minims of clean cold or warm water and dropped one of our almost instantly soluble hypodermic tablets and you ***at once*** have a limpid, neutral, unirritating, ready-to-safely-use solution of definite because assayed standard strength and purity. If you want to time the solution of our tablets use

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A quick eye is also very essential.

There ***must*** be a reason why our hypodermics are the most popular among the most particular physicians.

Ask your busiest confrere—or if you prefer

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Sold by all well-stocked druggists.

SELECTIONS

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Citarin is one of the newer anti-lithemic remedies which has come to stay. It has removed the *nodosities* of gout, and this seems wonderful. It will be found safe and efficient in many cases where there is a gouty diathesis. The effect is to keep the uric acid in a soluble state so that it may pass out of the system. Look it up!

"Nephritin" is the name given by Messrs. Reed & Carwick to a product based upon maceration of the kidney of the pig, as used in the hospitals of France, in case of nephritis. If you have a case of *Bright's Disease,* or other lesion of the kidney, it will be worth your while to obtain the literature of this remarkable nutritional remedy, *not drug,* and read what leading clinicians say of the new treatment.

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in itching and irritable conditions produces a feeling of comfort to the sufferer never before experienced.

It is the standard remedy for Eczema and acute inflammations of the skin and muco cutaneous margins, and is a superior dressing for Burns, Boils, Skin Abrasions and superficial wounds and sores.

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It nourishes the underlying tissues, prevents congestions and eruptions, obviates waste and atrophy, thus preventing wrinkling and cracking of the skin. It is superior to all others for the Hair and Scalp.

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The clearness of his foresight and the wisdom of his step were quickly proved by the host of other manufacturers who, after witnessing his success, could without risk to themselves follow MERCK'S lead.

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PIL. DIGESTIVA

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Pepsin Conc't	1 gr.	Gingerine	1-16 gr.
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As a dinner pill, Pil. Digestiva is unequalled and may be taken in doses of a single pill either before or after eating.

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H_2O_2 9%

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(Prepared only by)

Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France).

57-59 Prince Street, NEW YORK.

SELECTIONS

Our Colleagues in San Francisco. The lay press has made us quite familiar with the conditions which began with the recent dreadful earthquake and fire; but probably most of us do not know or cannot realize the dreadful straits in which many of our medical brethren in that unfortunate but brave community, find themselves. Some have lost their lives, as did Dr. J. C. Stinson, who will be recalled by many visitors who went to San Francisco after the Portland meeting, last June; "the walls of the California hotel fell on him while he was asleep, and killed him instantly." The account which Dr. E. W. Fleming has supplied our lay namesake is impressive. He and several others, men and gentlewomen, all stranges to him, walked for miles together over ragged, broken streets, their feet becoming swollen and bruised, and their flesh seared and blistered from cinder and flame. When the rest of this little party finally found shelter Dr. Fleming, unkempt and disheveled, continued about, relieving the sick and the wounded. Two women were dreadfully in need of help. He put his overcoat on some stone steps for them to sit upon. "In less than two minutes these steps appeared to pitch everything forward, to be flying at me. The groaning and writhing started afresh. I stood there in the street with the débris falling about me. It seemed the natural thing for the tops of buildings to careen over, and for fronts to fall out. The street gave a convulsive shudder and the buildings somehow righted themselves again. I thought they had crashed together over my head. I noticed that the eyes of men and women were rolling restlessly. Their tones were high-pitched. It seemed to grate on my nerves. Then I fell to wondering whether I was talking shrilly, too."

In New York City there is a Medical Relief Committee appointed by the New York Academy of Medicine and the Medical Societies of the County of New York, and the County of Richmond, which is prepared to receive contributions to a fund in behalf of our unfortunate Western brethren. These contributions should be up to the limit of our capacity. Dr. John H. Huddleston is the Secretary of this committee (17 West 43d Street). No doubt similar plans are making in other cities. *The Journal of the American Medical Association* finds that the worst has not yet been told. The actual needs of many San Francisco physicians—many of them formerly in good practice and circumstances—are such that they must have help to put them on their feet. The sufferers are men who are not asking for aid, and will not ask; they are not of that kind. Yet others who know the conditions are asking in their behalf. *The Journal* rightly appeals to the whole profession to the end that our brethren in the stricken region be relieved. Besides money, books and instruments are sadly needed. Subscriptions may be sent to the *Journal* by those who do not find it convenient to send direct, or through their own societies or organizations.

The large number of cases of pneumonia, bronchitis, and other acute diseases of the air passages prevalent during the winter and early spring, that will confront physicians, put them on the qui vive for agents of a remedial nature that will assist them in their winter's work. Opinion as to the proper management of a pneumonia differs widely, one man adhering to a certain mode of procedure and another employing another method of treatment. The point at issue is to keep the inflammation under subjection. But even with defervescence of the disease established, the trouble is not yet over. It is at this time that the need for a tonic constructive is clearly shown. The patient should now be put upon Hagee's cordial of cod liver oil. This is one of the best known of the cod liver oil preparations, and its palatability adds very much to its efficacy as a remedy. Hagee's cordial will prove acceptable to stomachs that are intolerant of the ordinary cod liver oil. Its therapeutic value is much enhanced by the addition of the hypophosphite of calcium and sodium.—*The Medical Mirror.*

The enterprise and courage of the members of the San Francisco drug trade were clearly exemplified during the recent disaster. Before the fire was extinguished they placed large orders with the manufacturing chemists. One house ordered 30,000 pounds of Antiphlogistine, and altogether over 100,000 pounds were shipped to the coast upon order within a week. On a steamer from New York, running up the California coast at the time of the earthquake, were 35,000 pounds of Antiphlogistine, and upon orders from the home office the emergency hospitals were liberally supplied free of charge.

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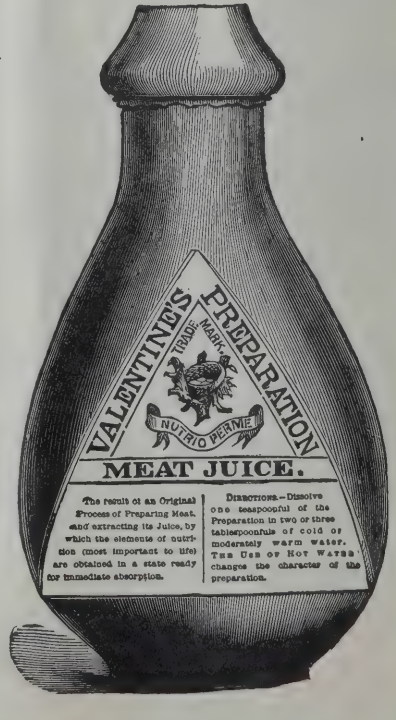
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PLACATING THE WHITE PLAGUE.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

RESOLVED: There is not any specific medicine for tuberculosis known, and the so-called cures and specifics and special methods of treatment widely advertised in the daily papers are, in the opinion of this committee, without special value, and do not justify the extravagant claims made for them, but serve chiefly to enrich their promoters at the expense of poor and frequently ignorant or credulous consumptives; therefore

Resolved, That a public announcement be made that it is the unanimous opinion of the members of this committee that there exists no specific medicine for the treatment of pulmonary tuberculosis, and that no cure can be expected from any kind of medicine, or method, except the regularly accepted treatment which relies mainly upon pure air and nourishing food.

COMMITTEE OF PREVENTION OF TUBERCULOSIS OF THE CHARITY ORGANIZATION SOCIETY.

Jan. 13, 1903.

In placard prominence and capital lettering the above announcement officially gazed at the thousands of interested visitors who honored the late tuberculuosis exhibition in Philadelphia with their presence. Compressedly this placard was a declaration of sanitary independence for all consumptives, present and prospective, and more distantly possible forever. Its basal and its keystone truths open to population the only vital corollaries on lines most effective, most economical and sensible and safe, from childhood to ripe old age, wherever and whenever the great white plague of civilization would be placated, arrested, subdued, shunned, exterminated. There it is—the basal element of exemption from the scourge of tuberculuosis—decent air for breathing lungs, sanitary air, fresh air, pure air with its vitalizing gifts to humanity. With all due deference to the holy church fathers who proposed to build only from the immaterial spirit, I solemnly believe that they would have promoted human happiness in the world and the greater success of Christianity had they considerately incorporated into the Apostolic Creed the Creator's salvation of a pure breathing-air environment for the human family from birth to death. There it is—the sanitary rock of ages—the basal element of exemption from tuberculosis—decent air, clean air, fresh air hourly for the lungs, pure air with its vitalizing gifts to mankind! What an opportunity for teaching practical righteousness was overlooked!

In January, 1906, we had in Philadelphia the Pennsylvania Tuberculosis Exhibition, under the auspices of the National Association for the Study and Prevention of Tuberculosis. Thousands of interested people attended this exhibition—eager to see what tuberculous lungs looked like—eager to hear how the disease may be relieved, or cured, or prevented. This exhibition was located in the business centre of the city, on a great thoroughfare, was elaborate in the earnestness of its demonstration, continued for ten days, and was made a popular feature of public attraction. In practical effect the exhibition accomplished emphatically more in the study of, than in the cure or prevention of, tuberculosis. The harp of every lecture seemed helplessly strung on the gimlet of the boring bacillus! Unfortunately that seemed to be about the sum total of expert knowledge. Instead of elaborating ground-floor conditions that naturally develop consumption of the lungs, the bacillus was made the hook on which to hang the initial and ultimate in the arguments by special lectures. There were about ten special lectures patronized by audiences ranging from one hundred to two hundred at each. The scope of discussion was finely chosen. For each hundred present there should have been a thousand—business men, store women, mothers of families.

I here recite the subjects wisely chosen: "The State Control of Tuberculosis." An infeasible project as futile as the guillotine as an alleviant for the development of disease. A whole lecture lost in talk —TALK! "Tuberculosis in the School." Treatment: Avoid crowding—debar children from tuberculous families—attend to ventilation—disinfect the schoolroom with something unfit to breathe, but be sure to SCOTCH out the bacillus if one lurks around somewhere—and there you are again! "Tuberculosis and Railroad Travel." An exhaustively pregnant theme treated blindfold. How? Suspect by whom you are seated—fancy some invalid is aboard bound for a sanitary El Dorado—imagine that the car air is infectious and hold your nose in a suffocating antiseptic sponge that shall trap any source of contagion—and there we are again shying off a possible bacillus till the car can be next disinfected with a germicide! Not a word—not even a suggestion concerning the smite of locomotive gas and soot and other form of fuel débris that altogether grind the life out of the lungs in the stuffiness of car travel when any long journey is undertaken. Next we have in the course "Tuberculosis in the Store." "Tuberculosis in the Workshop." Both addresses were very timely, and should be pressed unrelentingly into the consciousness and religion of every employer of anemic flesh and blood and beating hearts to stand behind counters in smudgy storerooms surfeited with merchandise dye-stuffs and the fœtor of staled rebreathed lung air from customers—an unsanitary condition that directly and exactly leads the destructive process of tuberculosis and evolves into visible existence this bacillus that under sanitary protection could not exist. And what is divulged of the store situation finds its counterpart in the workshop as a disintegrator of lung integrity. Two more lectures, supposedly learned, shying off the bacillus of fellow workmen, fellow saleswomen with a cough, but stupidly contracted and deficient in showing the people that the air that destroys the vitality of blood corpuscle in the lungs is the smiter of the lung tissue itself—is the dragon that consumes the life, the incubator that makes possible the "pathologic germs" that come and go as conditioned by the waste of disease. Then followed "Tuberculosis in Children." An instructive appeal to mothers in general terms variously repeated in health columns in newspapers and magazines regarding the importance of outdoor air, baths, "proper" clothing, "proper" food, avoidance of associations with the consumptives of community—but I did not hear one word said in regard to the depraving elements poured into the breathing-air of the household by mismanaged heaters, ranges, gas stoves, kerosene stoves, with close rooms, shut windows, night lights, specific expression of exactly

what it is that makes the homes of children unsanitary and compels most of the illness they bear or die from in tender years. The word "ventilation" is a conventionalized term. There are mothers who fancy they are models of propriety in their home-keeping. I have asked some such: "How do you freshen your house air?" Note the cogency of their usual reply: "Oh, I always air the house well every day—I open the windows of the bedrooms while I am making the beds!" "Why do you confine yourselves and the children to such close house air during the evenings? I notice that all the windows are shut. The shutters are closed and barred. Even the blinds are down and the gaslight started inside, though it is scarcely yet dark?" Listen to the domestic logic: "Oh well, night air is not considered healthy—besides, we always close our shutters when it is time to light the gas—somebody might look through the window!" Thus we see how many children as well as mothers are dragged into the preparation for subjects of tuberculosis—without the starter fad of a special "germ." Instead of generalities, the people need specific, direct, from-the-shoulder-out explanations of how their home and their workplace habits render their breathing-air environment positively injurious to lungs and blood, to heart and nervous system. But put it down as a stupifying fact that when learned lecturers pour out eloquence to the household laity larded with technicalities about bacteria and bacilli inhaled with any chance breath that may be or never be, it is like the pattering of rain upon the roof—of no particular account so long as the tin sheds the water. But when you unsaddle from your stilted steeds of science, and in plain phrase explain how it is and why it is that poisoned house air impairs the vitality, induces the illnesses, murders the lives of the dear ones at home, even to those who die of consumption, they begin to think that you have discovered common sense that can be comprehended.

At this tuberculosis exhibition was also displayed many styles of shacks or wooden tents planned to afford tuberculosis patients with an inflow of fresh air day and night, wet or dry. Any one who has had the experience of army life, as has the present writer, would welcome at a glance the prospective comfort of one of these numerous shacks in the camp. Our little ten by eighteen sheet iron stoves would almost instantly warm our canvas tents in cold weather. The trouble was not in the heating appliance, but which way the wind would come against the outlet of our smoke pipe. In army life we were supposed to be hardy enough for service; but these modern shacks are provided for men and women with lungs collapsing with the disintegrations of tuberculosis. There were shacks furnished with stoves within a few feet of the patient's cot—how about backing winds against the open ends of the smoke pipes to drive the smoke and fuel gas directly into the shack itself and consequently into the consumptive's suffering lungs! Ability to get at fresh air is not the only consideration where the ravages of consumption are to be placated; enthusiasm needs a bridle when prancing the limit of venture to exposure to the elements temporarily faced with the stoicism of polar bears in straits of desperation. Any shack for consumptives with a stove in it near the patient, and a smoke pipe going out at one end at right angle, should be on wheels that might be turned from time to time to suit the way the wind blew. The Linford Sanatorium is warmed in rigid weather—but by the appliance of hot water heat, with no chance choke from smoke or fuel gas. In this sense, an established Sanatorium is superior to scattered tents that take weather chances against the comforts of civilized warming. We read of consumptive patients, bundled in blankets, sitting and sleeping like bums or prodigals in frigid air and snow—nursing the fancy that they are recovering from tuberculosis. Under the physical circumstances of such cases this forced expose is the impetus of over-confident temerity because of its novelty. Many of these people are prone to go down all the faster afterward if the disease is really developed. It is only the fittest in vital energy who successfully survive. Those who are reported "improved," but who go home from a fresh air cure resort to die, as many do, are never reported. In the handling of every good thing there must be discretion and reason in its uses. It is impossible in a month or two to transform a sensitive, debilitated man or woman into the hardihood of Highlanders to the manor born. When none but pure air is breathed into the diseased lungs, oxygenation is so well promoted that the lung tissue is afforded an honest chance to heal. Pure air, therefore, is the prime essential in fresh air treatment. If cool and in gentle motion, such air is the most invigorating tonic that the lungs can enjoy. But extreme rigidity of temperature requires a hardihood of constitution that the real consumptive does not possess, and is of no utility to the situation. A community of shacks for the individual privacy of health seekers, with their infirmities of cough and expectoration, each shack warmed at will with hot water heat to comfortable degree in seasons of chilling damp and rigid cold, by attachment with an adequate hot water plant, to no extent interferes with the regulated inflow of fresh air, and constitutes an ideal sanitary management for tuberculous cases. No hot air register conducting gassy and dusty heat from a heater or furnace can prove of benefit to diseased lungs. The use of an excoriating kerosene stove or gas stove in any shack or tent or room occupied by a case of tuberculosis is like a drawn sword to the lungs and heart of the victim. A physician in my own neighborhood has within a month died suddenly of wasted lung and hemorrhages because he did not comprehend that he was committing suicide by his unsanitary mode of heating his office and bedroom. I have often passed by his well-furnished house during evening hours, and felt dismay at beholding his shut-up waiting-room, which opened to his office, illuminated with the magnificence of Oriental colors from the foot-wide painted porcelain globe that crowned his richly gilded though pernicious big coal oil lamp—one more instance of the folly of decorative fad, and one more calamity of hastened death!—death by tuberculosis, as the post-mortem demonstrated! We will courageously chalk out the helpless bacillus—innocent bleb of ferment in the physical waste of degeneration through lack of oxygenation at blood temperature—when it, the bacillus, is credited as being the wrecking cause of this lung destruction.

But the greatest educator of the Philadelphia Tuberculosis Exhibition was the remarkable array of preserved post-mortem samples of lungs and other

parts of the human organization to demonstrate the exact stages in tuberculosis. Since no one dies at the beginning of consumption, the initial stage could not be exhibited. Through this fact gleams the hope and the chance of arresting and of curing tuberculosis by the simple life of abiding in pure or normally oxygenating breathing-air day and night, outdoors and indoors—supplemented with the digestion of abundant nutritious foods. The interest in the preserved samples of tuberculous lungs was far more intense than was the eagerness to listen to the lectures. A profound mistake was made by the managers by crowding the lung exhibit into inadequate space for allowing the public intelligent access to the specimens at crowd hours. People standing four to six deep, craning necks over each other's shoulders to get a glance and hear a word of the explanations, were compelled to go away quite as uninformed as when they came. When so instructive and excellently prepared exhibit of pathologic or morbid conditions was opened to the interested public, the specimens should have been arranged a yard apart, and with at least three demonstrators instead of one only in charge to make the explanations. The exhibit was not brought out to advertise itself—it was intended to teach.

Agents of the exhibition were attentive and active in the distribution of gratuitous literature on tuberculosis. Tract No. 5 starts out with the withering assertion: "Tuberculosis is a contagious disease." For the sake of hope and justice to the history of humanity, this bluff of blindfold doctrine I essentially doubt, and take the liberty to repeatedly and publicly deny. The zeal of this blind propaganda in modernized pathology is bred of bacilli visions ever on the brain of its promoters. Let us turn the problem over. There are so many minds that can think by suggestion and imitation, but seldom independently and logically. How this world is crippled by such limitations! We are warranted in affirming that, until within the immediate recent time, for a hundred years nothing logical and practical was done to arrest consumption among the populations who were subjecting themselves daily and nightly to the unsanitary breathing-air their lungs were compelled to handle in the environment of their homes and work or business places. Now then, if for this hundred years "tuberculosis, consumption, scrofula, decline, marasmus, wasting disease, inanition, lupus, white swelling"—I am quoting from the propaganda—were actually contagious and unabated, humanity would long since have succumbed to universal contagion and become no more till after Gabriel's trumpet. It is the idea of a starter "germ" for every considerable disease that has lighted the torch of this salaam to the bacillus god on every hill of pathological uncertainty and professional failure.

In the second paragraph of tract No. 5 comes the second biff at expectation of cure: "The essential cause of tuberculosis is the tubercle bacillus—without the tubercle bacillus there can be no tuberculosis; the tubercle bacillus must somehow or other find lodgment in the tissues of the human body before tuberculosis can exist." This is about as rational as to say: "Go to sleep, John—if you go to sleep you will get to sleep—else you will not have sleep!" If this tuberculosis propaganda had reversed its mainspring, and said: "There can be no progressive tuberculosis without developing its resultant bacillus," it would spell to humanity a consistent rationale of the disease that would convey relief to the mind from the pirates of contagion, would enhance the effectiveness of human hope, and would clarify every natural means for sanitary prevention or cure. Farther along in the official pamphlet occurs this sentence: "The principal predisposing causes to tuberculosis are indigestion, rundown system, nervous exhaustion, and the depression following typhoid fever, diphtheria, pneumonia, etc." The framer of this pamphlet may have been an amateur who did not comprehend that what breaks down the integrity of the lungs is what is breathed into them wholesale, locally, directly and indirectly, breath by breath. What must most lungs handle? Look at the dust—the constituents of most dust—its irritants, its powdered manures and grinding débris, its house sweepings and powdered sands. This conscientious pamphleteer takes no cognizance of the environment of smoke and toxic carbonic oxide or fuel gases mixed with the common breathing-air with which most lungs must contend day and night year in and year out! Add to this the rot of re-breathed air in homes, in crowded business work rooms, in schools, churches, conventions, theatres, social aggregations of humanity—what? Do you even yet require a speck of bacillus to start and carry forth the disintegration of tuberculosis of the lungs? Phew! Let us read a little further along: "Persons disposed to tuberculosis, if compelled to shake hands with a consumptive or handle anything that has been used by a consumptive, they should wash the hands before eating." Yes, washing the hands a dozen times a day is good general practice—but planting into the minds of the sensitive public the idea that cases of lung disease are on a par with lepers can but exaggerate the psychological preparation for contracting what it most dreads. This pathological blackmail about contagion of tuberculosis, by men who only pose the bacillus as the demon of health, do not or can not comprehend the daily aggressions of unhealthy air that grind to death the lung cells of consumptives, notwithstanding the fact that many are begining to joyously discern that the opposite of bad air, namely, decent pure air, is the rational relief and remedy for tuberculous disease. Tuberculosis a contagious disease? The wife of Robert Neilson Stephens, the modern novelist, to whom I have previously referred, faithfully nursed her consumptive husband for ten years to the hour of his decease. If tuberculosis is contagious because of its attending bacillus, should not that microbe have gotten its bite into her long ago? At last report from the widow, in London, ten days ago, she was in her usual good health. The present writer nursed his own wife through consumption to her last breath thirty years ago, but bears no sign of tuberculosis yet—a pretty staunch refutation of this whim about contagiousness of tuberculosis. And as to heredity—my wife left with me three sons, children then, men in business now, none of whom show indications of tuberculosis. Breathing-air environment, not heredity, determines the family liability. A family may all go into this decline in similar way. Why? Because they are all flesh and blood, because

they were impressible by similar conditions, because their home and business habits and breathing-air environments were similar or alike, and so, also, the physical results. That is not heredity. The fact that one is not foreordained to die of the same disease that a parent or other relative died of, puts better vitality into hope than apprehension ever enjoys.

This tuberculosis exhibition was undoubtedly inspired by Dr. Lawrence F. Flick, chief of the Henry Phipps Institute in Philadelphia for the study, treatment and prevention of tuberculosis. A recent visit to this Institute convinced the writer that it serves more directly for the study of tuberculosis and care of patients, than for the cure or the prevention of consumption. For the practical study of tuberculosis, the Phipps Institute is magnificently planned and will accomplish a great purpose in a few years. I understand that no charity contributions or State aid are needed—all expenses being met by Mr. Phipps. The Institute is located in a poor, unhealthy, crowded part of the city, and in proximity to one of the slum sections, a community that has filled up with foreign element and where tuberculosis intensely prevails. The material is profuse, but unfortunately the building is unfavorably adapted to accommodate the work. Since the shout about "contagion" has been blared abroad, it would be difficult to find a desirable site and building in this city rentable for a consumption hospital. At the Phipps Institute a clinic is conducted in rather stingy quarters that smelled of carbolic acid on the first floor for outdoor patients who are under the management of the Institute faculty. Such patients are furnished with a printed copy of the rules that must be followed at their homes. A supply of tissue paper napkins is also given to each case to spit in, and paper bags in which to deposit the used napkins—all of which are to be burned together each evening. Inspectors from the Institute visit all the outdoor patients daily to see that the rules, thirty-one in number, are carefully obeyed. The rules are printed in English, Italian, Spanish and Russian Hebrew, to meet the needs of the nationalities that have recourse to the Institute for help. Rather in contradiction to the general idea of fresh air treatment for consumptives, we find the Phipps stocked with a varied drug store equipment, exceeding two hundred and fifty items of drugs and addenda. Pure air is not available in that location because it is not there, though a breeze from the Delaware sometimes reaches the location as a relief. I found no window arrangement as is adopted at the Linford Sanatorium in England—for indeed the building stands hemmed in so that only the front and the back must be depended on for air. Therefore, while every feature favors the study, the idea of prevention and cure are out of sight. Opportunities for autopsies are the consequence. When a serious case is admitted, an agreement is signed before witnesses by the nearest responsible relative in effect that in consideration of treatment and care at the Phipps Institute, permission is granted to the Medical Staff, in the event of death at that institution, for an autopsy. Therein consists the climax of the study. Every department of the body, every channel and organ and important tissue of the body, is subjected to scrutiny such as a most minute autopsy alone can afford. The autopsy blank report calls for data on two hundred and thirty-six different points of observation for study. The magnificent display of autopsy specimens already procured demonstrates about all that it is necessary to learn about tubercular degeneration in the human body. They suggest that outside of its service as a hospital resort for consumptives, the Phipps Institute, in order to put into operation the feature of prevention and cure of tuberculosis, should, within a year from present date, open a branch outside the smudge of city air to which all hopeful cases may be transferred for the advantages of a fair chance to outflank their disease.

With polite consideration of a leading lady nurse, I was conducted through the wards—male and female. In my opinion, about one out of every four cases was of a type that should not have been staying in such a place at all. The psychological depression of abiding among so many in the confirmed and in even the dying stages of consumption I believe to be entirely adverse to restoration. Besides, it is questionable advantage for any one moderately sick to be cotted among a crowd who are worse—many very markedly so. In the Phipps Institute it did not seem practicable to divide the long wards by cross partitions, because of the lack of side windows that would afford abundance of free air ventilation. Hence no sorting and separation of cases from the presence of each other was permissible, though the hollow coughs and wretched expectoration of sputem by the cases near the dying stage were distressful and sickening. The feeding end of the problem encountered no embarrassments. The varieties of foods were liberal, and the ad-interems between regular meals with large allowances of eggs and milk kept all stomachs busy taking stock for the capital of digestion. The kitchen and cooking are located upon the top floor, which releases the wards below from range fire gases and food odors. The heating of the Institute floors is by the hot water system and sanitary. In evidence of the amplitude of the Phipps Institute outfit, I will yet record that the House Inventory numbers the variety of two hundred and sixteen articles for use. Added to this comes the inventory of kitchen outfit numbering more than eighty articles for culinary purposes. The dishes report embraces fifty-two varieties of supply—the numbers of each not given of course. The variety—not the numbers of each—of articles used in the wards is listed at one hundred and fifteen. This is not all. The office inventory covers one hundred and twenty-eight different kinds of appliances; and the printing and stationery department is provided with sixty-two different forms of supply. If any of our friends contemplate founding a hospital or sanatorium for placating the aggressiveness of tuberculosis, they may consult the schedule of preparation herein cited for the care of fifty patients.

The history of each case at the Phipps is systemized to the fullest and most particular extent. I have never seen anything before that approached it for minuteness. The physical examination simply exceeds description unless one covered a whole chapter. One is rather astounded at seeing what all

may be included in a thorough study of tuberculosis. Dr. Flick, the medical director, has wrought a wonder by his records of investigative details scrupulously conducted from the day of entrance to that of departure. From family history and social relations and locations of dwelling places, a grasp is made to learn the conditions of health during first five years of life and the range of diseases gone through in childhood and youth. Then come considerations of all present symptoms and appearances, and a search of glands and the organs in general, with full explorations of chest and heart. The genito-urinary and rectal examinations for male and female do not allow a secret hidden in the sexual system of either. The nervous investigation runs from family history through mental attitude and cranial nerves, flexes and jerks, to delusions and dreams. The nose, throat and ear are subjects of detective scrutiny in all divisions of their structure, rarely equaled by an expert specialist when preparing a treatise. Detailed records of these examinations of individuals are written out and filed for keep—but with what ultimate advantage or purpose of which perhaps has not yet been decided.

Study, study is the primal element of the Institute in its present opportunities, but all that can be learned on that line should be accomplished in one or two years. I do not perceive any advantage in learning or repeating a characteristic condition over hundreds of times to merely repeat what is discoverable in twenty cases. It strikes the writer that the working schedules of the Phipps Institute are so elaborately minute as to be gigantic in the mosaics of their details. The excess of red ribbon details of analysis and records of merely individual cases, that are really non-essential to results, are over-cumbersome for general benefits. It is too much like critically examining and laying upon the drying shelf for specimen every splinter and chip by which to decide the quality of a load of wood. So much accumulated repetition does not advance the fighting line of knowledge. An expert diagnostician of consumption would discern as many essentials, if necessary, in twenty minutes, as this cumbersome method would reveal in six hours—covering as it does by actual count not less than three hundred points of investigation of the harassed victim who must be nearly dead by the time it is gone through. Now if we add the two hundred and thirty-five demonstrations required to fill out the autopsy report, we find nearly five hundred and forty markings for a common case of tuberculosis! What a hysteria for hide and hair while the enthusiasm for chase rules the day! I doubt if Dr. Flick himself is aware of the superfluity of investigation he has inaugurated as medical director. But the Phipps Institute is magnificently fulfilling its purpose as a school for study—its location and restricted conditions, where started, will absolutely prevent it from becoming a fresh air sanatorium for the cure and prevention of consumption. For this I feel sincere sorrow. That poor persons, whose sands of life are stranded in tuberculosis, may find a good home and kindly care there, and these mostly from the Old World, which dumps too many of its disabled afflicted upon our shores for support, is a supreme test of Christian charity—but wholly unnecessary for the welfare of American population. These foreigners abide in such a way that they breed disease broadcast, and then home themselves in institutions to which they offer nothing except their empty stomachs and diseased bodies for American sympathy and support. Offering their carcass for autopsy is the cheapest way in the world, that to them has ended, for acknowledging their sense of indebtedness to their benefactors so long as benefactors are needed for home comforts. The excess of hospital service is demoralizing and pauperizing this country—increasedly filling up with uncanny representatives of foreign population who bring with them to America not only their ignorance and dirt, but also their spirits of anarchism, cruelty and murder. The Phipps Institute is magnanimously doing service to such community of foreign squatters who have crowded better people away from that section of Philadelphia, who have ruined the values of real estate in that section, who have made of it an unsanitary area of prowling diseases, and who by natural unthrift lodge themselves at ease at the nearest door of comfort for help. Look at the necessity of printing the code of rules in three languages besides the English in an English speaking city! That is an important signal of what we are up to in this country. Doubtless this city is but a type of many others. Congested dirt, congested coal gases and coal oil smoke, untidiness in sleeping quarters and human crowding, malodorous persons and clothing, onions and pipe smoke and whiskey or beer, sweated skins and mangy hair, nests of decayed air and human rot for the lungs to inhale, there is nothing else needed to develop the white plague among these obtrusive people where hospitals for the care of consumptives can find everlasting material for study—if study is most needful. Occasion for less study would be more hopeful. If these crowders were scattered abroad from congested areas of the city, the fresh air of the country would soon reduce consumption among them. For the relief of tuberculosis a fresh air country life at raising corn and potatoes is far superior to treatments in a city hospital. Dispersion of the people from city centers is the open highway to sanitary living and human happiness. If millionaires who are building hospitals for public accommodation of the ailing, would instead apply thir means in providing ten acre fertile lots of ground on which persons with developing tuberculosis might home, rent free for one or two years, raise their own milk and eggs, make a plain livelihood by cultivation of soil in open air work, thrift and health would be more importantly promoted than can be won by the pauperizing process of building so many hospitals for the free care and treatment of persons whose habits of life breed in themselves the seeds of consuming disease.

1726 North Twenty-second street

A new tuberculosis serum has been attributed to Dr. Ishigami, an eminent Japanese bacteriologist. Unlike other antitoxins, this does not induce a rise in temperature. Dr. Ishigami declares that it has cured one-third of the patients experimented upon; it is not, however, applicable to advanced cases.

OUR KNOWLEDGE OF CANCERS—ESPECIALLY OF GASTRIC ORIGIN.

BY M. SHELLENBURG, M.D.

THERE are four problems in the cancer question. First: Is the number of deaths from cancer increasing? Second: Have micro-organisms any relation to the cause? Third: How shall cancer be treated? Fourth: What are the prospects of successful treatment?

There is a widespread belief among the professional and laity alike that the number of deaths from cancer is increasing and has been increasing for some time. Thus in England the Registrar General showed in his report that the registered number of deaths from malignant disease was two and seven-tenths times more in women and twice as frequent in men in 1891 than on the average for the decade 1851 to 1860. Dr. Arthur Neusliolme and Mr. Geo. King, two English authorities, have gone elaborately into the statistics of this subject. It is a problem difficult to decide, for our medical knowledge has advanced rapidly in fifty years, and it is difficult to compare different decades for the power of observation and diagnosis varies so widely in that period. Cancer is, of course, a disease of mature life; more people attain the "cancer age" than formerly, hence there are more people in whom there is the possibility of malignant disease developing. Monserrat claims that the statistics which have been collected by various authorities since the suggestion was made that cancer was on the increase now establish the fact that this condition really exists and that it is impossible to explain the returns in any other way. In England, Ireland and Scotland the annual death rate from this disease in the million living shows a steady increase. Thus in England the rate in 1877 was 486; in 1887 it was 615, and in 1877 it rose to 787. In Scotland it was 540 in 1883, 610 in 1890, and 770 in 1897. Ireland has always shown a lower rate, but it was 370 in 1881 and 580 in 1897. In this country Massey has gathered some useful tables from seven large American cities. In 1870 Massey found that the death rate from cancer in 1870 per 100,000 was 35.4 deaths, while in 1898 it was 66.4 in the same class of cases.

Of course we remember the old-time humorous definition of statistics, as to there being three classes of lies—lies, blank lies, and statistics; but nowadays they command more respect. But before they can be used to prove the actual increase of a disease, certain allowances and corrections must be made. For example, increased accuracy of certification must account for a certain proportion; thus the English Registrar General makes the following comments in this connection: "It seems scarcely possible to maintain the optimistic view that the whole apparent increase can be thus explained, and it must be admitted as at any rate highly probable that a real increase is taking place in the frequency of this malignant affection." Not only in the more obscure cancerous conditions of the viscera is the increase found, but in cancers of the breast and tongue, which were recognized as clearly twenty years ago as now, is the increase shown. Thus taking cancers of the tongue, the admissions to St. Thomas' Hospital, London, show that the disease has increased frequently five per cent. per annum. Moreover, accurate diagnosis has eliminated from cancer records many conditions previously confused, such as lesions, due to tuberculosis, actiniomycosis, or syphilis.

As I wrote above, improved sanitation and a more successful treatment of children's diseases has allowed an increasing number of individuals to reach the age when cancer occurs, so that corrections for age are necessary; thus if there are in a locality above the average number of people over forty, a corresponding proportion must be subtracted from the cancer cases before an absolute increase can be proved. In England they believe that the census of 1891 proved that the proportion of persons above forty-five had not increased since 1871, and hence it is as element not necessarily considered there.

Payne, in 1898, advanced an ingenious theory, which was that cancer killed those spared by a diminishing death rate from tuberculosis; in other words, that it is a condition of substitution. Since then, however, Payne has acknowledged that this theory is inadequate. Yet a recent study of the comparative statistics of phthisis and cancer in England gives some shadow to this belief, but elsewhere no figures give any comfort to the theory; in fact, in Scotland and in Ireland there has been no decrease in the phthisis mortality at all. Curiously enough in all these statistics the increased mortality affects men much more than women.

Sir William Banks suggested that an increase in luxurious living has been a cause for increase of cancer, the altering of the habits of life in later years. Thus there has been an increased consumption of rich, heavy animal food. This gives rise to a low form of gout, which may serve as a determining cause for cancer. He points to the fact that butchers, innkeepers and commercial travelers, all heavy eaters, show a considerable increase in mortality rates for cancer.

Cancer is a disease of the temperate zone, especially in the northern hemisphere, being almost unknown in northern Norway and Sweden and in Greece and Turkey. In Siberia and southern China it is rare, but more common in Japan and northern China. In North America the northern parts are exempt, but in the United States the mortality is large. It has been found that there are certain districts in England where cancer mortality is considerably above the average—that is, fifty-eight per cent. This high death rate is said to be associated with defective drainage of the soil and subsoil, and their contamination with sewage. Long-inhabited regions supply the larger number of cases. But no especial connection has been found between any particular geological formation and this disease. As an example of unusual prevalence, there is a certain street in Leamington, Engand, which developed five cases in ten years; also frequently second and third cases occur in the same house.

Taking up the second problem, as to micro-organisms, Adami, studying cell multiplication in its connection to tissue regeneration and the development of tumors, suggests three sources of origin of the cells of tumors. Adami defines tumors to be the result of aberrant tissue growth, due to certain cells assuming excessive proliferative properties outside of the needs of the human organism. The three sources of these cells may be: (1) Embryonic cell nests, which remain latent and take on themselves

rapid proliferation. (2) Mother cells, from which the fully developed cells of the tissue generally arise; these take on excessive proliferative tendencies, while the daughter cells retain the simpler characters of the mother cells. (3) The specialized cells may return to a simpler type and gain the capacity for proliferation in excess. Such reversion occurs in late adult life in glands. Adami believes that cancer is a sequel to causes inherent in the structure of the affected tissue. Thiersch has explained the prevalence of cancer in later life on the basis of altered relationships between the elements of tissues, whereby the connective tissue element becomes looser in texture and less resistant to any proliferative tendency in the epithelial element, so that the epithelial cells make their way into lymph canals and spaces. Unfortunately for this theory, the marked connective tissue proliferation found in many cancers is opposed to this idea.

Babes makes the excellent suggestion that the causes of cancer may be numerous; any initiation, either mechanical or chemical, may be capable of setting up epithelial prolification, providing the tissue has the predisposition. Shattock has experimented on this so-called "mechanical theory of the origin of cancer." His work on rabbits is well known; he points out that examples of displaced epithelium and the growth that may follow can be found in the epidermal cysts of the fingers and palm and in cysts following rupture of ovarian demoids. Such cysts show no malignancy. Again data is against this theory, for the papillomata following rupture of an ovarian papilliferous cyst are new formations pathologically and are contagious.

There is no doubt but that certain parasitic organisms with destructive characters are found in many carcinoma and often in sarcomata, too. Their morphological characteristics are well known, but we do not know their true classification or their cycle of development. Scientific proof is lacking of their etiological rôle in cancer, and the consensus of opinion now is that they do not produce cancer of themselves. Sjöbring has made an excellent series of observations on this subject; according to him, these organisms resemble no animal or vegetable parasite of any known description; he gives three types, amœboid, rhigopod and involution forms.

Where a direct connection between injury and the development of cancer has been shown, yet there is no light on the question of the specificity of the cause. It is natural to reach for a determining cause for a malady, and an injury is common to nearly all women, especially trauma of the breast at one time or another. In 713 cases Wurz found in five years only nineteen in which a distinct connection to a previous trauma could be established. Two of these cases are as follows: A man aged fifty was hit by a falling apple. Unlike Sir Isaac Newton, it gave him no inspiration, but only a wound on the left cheek. This did not heal and within a year the ulcer became carcinomatous. Again a man of sixty-eight was wounded by the horn of a bull; this did not heal up and some months later he developed a cancer at the spot.

Taking up now especially the subject of cancer of the stomach, we find clinicians generally divide this condition into three classes. (1) Latent cancer. (2) Cancer which shows itself solely by functional gastric disorder. (3) Cancer which besides interfering with stomachic functions exhibits definite physical signs.

A latent gastric cancer is generally associated with some other disease, such as tuberculosis, pleurisy or emphyrema, and the symptoms of this latter condition conceal the gastric trouble. Œdema in the legs is not uncommon, following the feeble cardiac action and anæmic state of the blood. Such a condition may suggest simply a fatty heart. A patient in my practice some years ago simply displayed a growing cachexia. He was a seafaring man and had been dissipated in his time. He lost flesh and health, developing a straw-colored complexion. Beyond an occasional pain in the abdomen he showed no symptom. At the autopsy, which came later, a latent cancer was found. Its presence was suspected, but it was impossible to demonstrate it in life. Trousseau places great stress on plegmasia alba dolens in these cases; in mine it was lacking. Of course, if small cutaneous nodules can be found it confirms the diagnosis, but they are frequently hard to find.

The state of the blood is diagnostic in these cases; in pernicious anæma the red corpuscles frequently fall below a million, while in cancer they rarely fall below two million; yet, after all, this is only comparative and not absolute. The reduction of the number of the red cells does not keep pace with the cachexia, while in pernicious anæmia, the cachexia does not keep pace with the reduction of the red cells. In all cases of obscure import, examination of the blood at repeated intervals is vital.

Phlegmasia alba dolens is liable to occur in these cases, due to the feeble cardiac action and the anæmia. This symptom, due of course to thrombosis of the femoral or other large vein in the lower extremity, may follow a more important cause, as pointed out by Henry. This observer examined the blood of a case of gastric cancer in which there was phlegmasia dolens of both lower extremities. The white cells numbered fifteen thousand, the red two million four hundred thousand per cubic millimetre. It was hard to get enough blood from the finger-tip, so Gower's color test was omitted. The ratio of white cells to red was both absolutely and relatively increased, being as one to one hundred and sixty. Numerous granule masses were observed, hæmatoblasts or blood-plagues. These are intimately connected with the necrotic process of coagulation, especially with the formation of thrombi.

The next group of gastric cancers show their presence simply by functional gastric trouble; in such cases the place of the disorder is evident and the diagnois lies between dyspepsia, chronic catarrh, ulcer and cancer. As a rule the symptoms are very obscure and insidious. They consist chiefly of unpleasant sensations and a sense of heaviness in the region of the stomach with loss of appetite. This loss of appetite becomes fairly complete as the case develops. As a rule vomiting is an early symptom, occurring before breakfast and often containing little, but some, forthy mucus. Later particles of food are ejected after the meal, or occasionally not for some time. This time for vomiting after eating may have a

diagnostic value in reference to the seat of the trouble; thus if the disease is at the cardiac orifice the food generally comes up in a few minutes after being swallowed, but if at the pylorus, it may be hours later. Constipation is a common sign, especially in pyloric cancer, although diarrhœa may occur late owing to the patulous state of the pylorus. Pain is a very common symptom and often is produced only by the passage of food into the stomach. Hæmatemesis does not appear until the disease has ulcerated, and may be entirely absent, especially in pyloric cancer, for here death comes by obstruction of the passage of food into the intestine before the stage of ulceration has arrived. In the text-books it is stated that the vomiting is generally of material looking like "coffee grounds," but as a rule I believe this condition to be rare. It occurs so infrequently that it is in the minority of the cases. All the other symptoms, difficult digestion, pain and vomiting, are common to gastric catarrh and ulcer; so that these conditions must be excluded. As a rule in chronic gastric catarrh, pain is not complained of when the stomach is empty, and the condition is much slower and more chronic than cancer and liable to improvements, during which period the general health is fair and the cachexia is always less marked. Gastric ulcer attacks the young, especially the female sex, while cancer is rare under forty. Vomiting of bright red blood and acute lancinating pain felt in the spinal region are common in gastric ulcers, also marked remissions may occur.

When we come to the third category of cancers of the stomach, we have those which not only show functional gastric disorder, but a tumor as well. Here the diagnosis is clearer and easier, for we have physical signs as well as symptoms, yet it often is a matter of great doubt and difficulty to settle this question, for a tumor in the epigastric region is not necessarily stomachic in origin. It may spring from the liver, the gall bladder, the intestine, the pancreas, the lymphatic ganglia or even from the aorta. We must exclude all these sources before we can diagnose properly. An hepatic tumor is flatter on percussion and rises and falls with the respiration; there is jaundice early which persists, which is a highly significant symptom. Should the cancerous nodules develop in this form, the diagnosis is generally easy. Tumor of the gall bladder, due either to impacted calculi or a carcinoma is farther to the right than any gastric cancers, while we may have a history of hepatic colic, followed by icterus. A cancer at the head of the pancreas which presses on the pyloric orifice is hard to diagnose, but there is absence of hæmatemesis and diarrhœa is common with characteristic fatty stools. Glycosuria would also point to pancreatic trouble.

An intestinal tumor below the duodenum is as a rule too low to be confused with gastric cancer, but when in the duodenum it is practically the same as a pyloric cancer. We would not be likely to confuse cancer of the omentum with one of the stomach, for it would be too diffuse and also felt in the umbilical region and the symptoms would be intestinal. The expansive pulsation and fruit of an aortic aneurism should detect its presence; the possibility of its existence in this region must be borne in mind.

At times enlarged lymphatic glands on the greater or lesser curvatures of the stomach may simulate cancer, but these tumors are rare, except in Hodgkins' disease. For all this, the diagnosis is often obscure, baffling and difficult. Here comes in the analysis of the gastric juice. Ewald demonstrated the absence of free hydrochloric acid from the gastric juice in many cases of cancer of the stomach, and this fact was heralded as an infallible sign of cancer. Riegel, however, proved this to be a mistake, and demonstrated the following facts. If the secretions removed by a sound from the stomach three hours after a simple meal of bread and water show free hydrochloric acid and normal digestive power, cancer is probably absent. If the digestive power is feeble, however, and free hydrochloric acid is lacking in the gastric secretions, it does not follow that gastric cancer exists, for the same deficiencies in acid and digestive power can be found in atrophy and amyloid degeneration of the gastric mucosa, in cerionic catarrh and nervous dyspepsia, all conditions of impaired innervation of the gastric glands. In transient nicotine poisoning or in seasickness free acid is apt also to be absent. To determine this point do not depend on the ejecta, but remove the gastric contents by use of a flexible tube passed down the œsophagus into the stomach. The reason of this procedure is that hydrochloric acid is normally not present in large amounts until the height of digestion, or about three hours after eating, while vomiting is apt to occur shortly after eating. Again after vomiting the chemical reaction of the gastric juices is generally altered by the bile and mucus. Absence of hydrochloric acid from the gastric juice is only diagnostic of gastric cancer when taken with other symptoms and signs. It is due simply to atrophy of the mucosa and the catarrh which follows cancer. I remember an extremely unfortunate case where solely on this sign a patient was operated on. She had a history of cancer in the family, but on operation nothing was found. As the surgeon had committed himself definitely to cancer on strength of the family history and the absence of hydrochloric acid, he was placed in an embarrassing position.

Diminished secretion of urea, according to Rounnelaere, is another sign of gastric cancer. He formulated the rule that when a chronic affection of the stomach exists and the daily secretion of urea falls below ten grammes cancer was present. Unfortunately, the excretion of urea may be as low in other conditions. An important point is enlarged lymphatic glands, which should always be searched for in gastric cancer. Troisier called attention to the enlarged supraclavicular glands, especially in latent cancer. Like other signs, they are chiefly of corroborative value.

Henry sums the whole situation up as follows: "Leaving out of view the stomach symptoms proper, which are often misleading, it is believed that a chemical and digestive test of the secretions of the organ, a proper examination of the blood, a careful search for enlarged glands and cancerous cutaneous nodules, and lastly a quantitative estimation of the amount of urea of the urine, will furnish facts sufficient for a positive expression of opinion in every case of real or alleged gastric carcinoma."

THE LATEST SUGGESTIONS IN THE TREATMENT OF CHILDREN'S DISEASES.

BY WALTER BERGER, M.D.

Part II.

As to intussusception in children, Fagge reports 18 cases; in 15 of these cases the diagnosis was easy and treatment was prompt. In one case a diagnosis of tuberculous peritonitis was made, and in consequence of this operative interference was undertaken too late. This was probably a chronic intussusception, in which the acute exacerbations were caused by an increase of the invagination. Two cases in which no tumor was found ended fatally, while ten of the 18 cases were of the single ileocecal type. One case was of the enteric type, and was of interest in that the ileum at the apex of the intussusception was so much narrowed as to suggest the possibility of a congenital stricture at that spot having given rise to the intussusception. There were 7 double intussusceptions, 3 colicileocecal, 2 ileocelic colic, and 2 enteric ileocecal; in one case there was possibly a triple intussusception, for the ileum was prolapsed into or through the ileocecal valve and there was a well-marked and apparent invagination of the caput coli some distance from the right of the valve, so that this may have been colic ileocolic colic and not ileocolic colic, as mentioned in the statistics. In seventeen cases a primary laparotomy was performed at the earliest possible moment; in the eighteenth the case inflation had been twice tried and failed. Except in two cases the incision was made on the right side of the midle line, with the center at or below the level of the umbilicus; in the majority it was through the right semilunar line. Six patients died between four and twenty-four hours after the operation from shock and toxemia, which in four cases was clearly due to the resection of the bowel. One of these patients was so ill that nothing more than the formation of an artificial anus could be attempted. In one case the cause of death could not be determined. Fagge's immediate results show a mortality of 39 per cent.; if in this list are included two babies who were readmitted within a few days of their discharge, and whose deaths were indirectly a result of the intussusception, the mortality increases to 50 per cent. Both these babies died twenty-three days after laparotomy. Excluding five irreducible and gangrenous intussusceptions, the mortality is 15 per cent. Clubbe has done one hundred laparotomies for intussusception in children, with sixty-three recoveries and thirty-seven deaths; the relative frequency of the various forms was as follows: Heocecal, 64 patients, 43 cured, 21 died; ileocolic, 12 patients, 7 cured, 5 died; 20 patients, 11 cured, 9 died; colic, 3 patients, 2 cured, 1 died; enteric, 1 patient, 1 died. Clubbe employs the side incision, except when the mass is in the transverse or descending colon, when the incision should be made in the middle line, the umbilicus being the center of the cut. To close the abdomen, he nearly uses through and through silkworm gut sutures with a Reverdin's needle. After the operation the patients are given morphin, 1-40 to 1-20 grain, repeated, if necessary. Strychnin is given hypodermically until the immediate shock passes; sometimes salines. Within twelve hours, the colon is washed out with a weak solution of permanganate of potash, nearly always producing a bowel movement.

It has been shown by statistics that 30 per cent. of school children possibly show some affection of the auditory apparatus; in most cases the source of these affections could be traced to causes that occurred before these children reached the school age, and the school directly had no special influence on the development of ear affections. Along with ear affections school children showed a great frequency of diseases of the throat and nasopharynx, especially the presence of adenoid growths which often were the cause of the ear trouble. School children should be examined periodically as to the state of their hearing by competent specialists, and teachers should also be instructed to warn parents of the importance of taking care of the ears of their children.

In the treatment of pneumonia in infants, Northrup summarizes his views as follows: 1. Castor oil to clear the field of operation; it is the first aid to the injured. 2. Fresh air, cool and flowing. It reddens the blood, stimulates the heart, improves digestion, quiets restlessness and aids against toxemia; regulate the temperature of the air in the room inversely to that of the child. The patient's feet must always be warm and head cool. 3. Plenty of water, inside and outside. Temperature as indicated by child's temperature. 4. Quiet and rest. 5. Correct the feedings to prevent fermentation and the formation of gas in the abdomen. If necessary, give high, hot salines. 6. Antipyretics: Water; no coal tar products. 7. Heart stimulants: Fresh air, hot foot-baths, relieving tympanitis and crowding. Hot foot-baths and hot salines can be given in a cold room; both can be given under bedclothes. 8. Drugs: Whiskey and strychnin. The first step is to establish a sick-room régime, avoiding extreme measures; temperature should be controlled by the use of a pack; the temperature of the water should be 90 F. As heart stimulants he uses strychnin and strophanthus, when they are indicated in heart weakness. The application of counter irritants to the skin over the thorax is of service in cases in which there is evidence of much bronchial congestion and bronchial inflammation and bronchial spasm. Kerley uses the old-fashioned mustard plaster, repeated every six hours, usually for the first forty-eight hours; after this time it is used frequently or discontinued. Expectant drugs should be given with great care, and when used should be prescribed in tablet or powder form. For a child one year of age Kerley occasionally gives 1-100 grain of tartar emetic and 1-40 grain of ipecac after feeding. In case the cough is severe and teasing and not relieved by steam inhalations, a small quantity, 1-4 to 1-2 grain, of Dover's powder may be added.

Acute nephritis complicating mumps may occur in either children or adults, and is much more frequent in males than in females; the parotitis is usually double and mild in character, and the nephritis is more liable to occur during early convalescence. Exposure to cold may be a predisposing factor and the nephritis is usually moderately severe, of less than one week's duration and ending in complete recovery. Rarely it may develop into chronic nephritis, or it may be so severe as to cause death. Miller advises that careful examination of the urine should be made and that strict precautions against exposure should be taken in all cases of mumps, both during the acute

stage of the disease and during convalescence.

Statistics showing the mortality during the first year of life to be 18.33 per cent. in the European states, and in the registration area in the United States 18.28 per cent., nearly one quarter of which are due to diarrhea. Curiously, in European countries the greatest mortality occurs during the cold months, while in this country it is just the opposite. The causes assigned are: 1, hot weather; 2, artificial feeding; 3, bacteria. Statistics also show that by far the greater number of deaths occurred in bottle-fed babies, being mainly due to the difference in the composition of the milk, and to the fact that even though the milk has been sterilized or pasteurized, the germs may be removed thereby, but the poison resulting from the germs has not. The treatment should depend on the form of the diarrhea and the length of its duration; the different forms may be divided under the head of acute dyspeptic diarrhea, milk poisoning, cholera infantum and enterocolitis are the treatment classified under four headings, starving, washing, resting and healing. Put the child on barley water until the vomiting and diarrhea have ceased. In order to remove the poisonous matter, if early, washing out the stomach; if later, the washing out of the intestinal canal by means of purgatives, etc., is of value. Food should not be given until the symptoms subside and then the best results will be secured by starting off with a cereal treatment with malt; of the remedies having a healing effect, bismuth is especially efficient. As to alkalies in infant feeding a considerable amount of the alkali may prevent all stomach digestion, forcing the task of digestion on the intestine, which, while often useful for limited periods, must necessarily interfere with the development of the gastric functions so necessary for the normal stomach if it is to become fitted to digest the solid diet of the adult. By adding a moderate amount of alkali, the task laid on the stomach may be limited to one it is able to perform. Milk diluted with plain water containing no alkali is promptly clotted in the stomach by the rennet ferment, and the clot is transformed into tougher masses when acid is secreted; lime water added to milk checks the immediate action of rennet and makes the clotting more gradual, altering the form of the curd and allowing, possibly, of the passage of some unaltered milk into the intestines, but leaves no large amount of alkali behind to check the stomach digestion. With bicarbonate of soda added to milk, the action of rennet, hydrochloric acid, and pepsin are all prevented by the greater amount of antacid present until this is finally neutralized; portions of the milk are not liable to get beyond the fluid state and continue to escape into the intestine, reducing materially the burden of digestion laid on the stomach or, if the alkalinity persists a sufficient time, relieves it entirely, the labor falling on the intestine. In the young infant the stomach is just beginning its functions, and the earliest secretion which acts on the milk is rennet. Hence, it is not difficult to understand the clinical effects of adding 10 per cent. lime water or two grains of bicarbonate of soda to the ounce, to the food of very young infants. The food is weak, in that the proportion of milk is small. The milk is decidedly alkaline, so that the rennet ferment will not act and the effect is to promote rapid emptying of the stomach; for whereas curded milk tends to be retained by the stomach, fluid milk tends to pass into the intestine. This assists in tiding the infant over a period of undeveloped and difficult gastric digestion, and as later the alkali is reduced, directly from 10 per cent. to 5 per cent. or from 2 grains to 1 grain to the ounce, and also as the amount of alkali relative to the milk is indirectly increased by augmenting the amount of milk in the mixture, the effect of the alkali is gradually lessened. The effect of adding alkalies to the food seems, then, to be that of influencing the place and type of the digestion of the food, and the problem which must be worked out in the near future will be to determine the proper kinds of alkali and the quantity of such alkali to be added to produce certain results.

Wethered wrote, fifteen years ago, that the treatment of scarlet fever, based upon the theory that the disease is due to a specific germ, is rapidly becoming more firmly grounded; this is shown by the fact that the complications which increase the gravity, sufferings, and death rate of scarlatina, may be rendered less frequent by timely and proper preventive treatment, this consisting of the early and oft-repeated application of non-irritating germicide remedies. The most scientific mode of applying the treatment is by spraying or irrigation with an antiseptic such as the peroxide of hydrogen, 1 part to 4 of water for the fauces, 1 part to 8 of water for the nares, used hourly for every half-hour, or with corrosive sublimate, 2 grains to the pint of water, employed every two hours within non-poisonous limits, or with some other non-irritating but efficient disinfectant; a nasal injection should always be warm. Smith has used as an antiseptic wash for the nostrils, with apparently good results, a combination of boric acid, sodium borate, and common salt, as in the following formula:

℞

Acidi borici 3ij
Sodii boratis 3ij
Sodii chloride.....5i
Aquæ puræ.....Oj

Misce. Sig: One teaspoonful to be injected into each nostril hourly.

In all hyperpyretic cases of scarlatina, whether its form be sthenic or asthenic, acompanied by pronounced nervous symptoms, an ice bag or its equivalent, a linen or silk handkerchief wrung out of the ice water every five or ten minutes, should be constantly applied over the head, so long as the temperature remains at or above 103 degrees. The ice bag should be about one-third full, so that it fits over the head like a cap. Add one-fifth part of alcohol to the water, or, as Henoch recommends, adding vinegar to it. At the same time as a potent means of abstracting heat, at least when the temperature is at or over 104 degrees, a similar application should be made around the neck, and especially along its sides. Cold applications over the great vessels of the neck, the jugulars, and carotids promptly abstract heat from the blood, while they diminish the pharyngitis, adenitis, and cellulitis. In sthenic cases, in which the extremeties have a pungent heat, a bright red color, active circulation, the limbs should be frequently sponged with cool water containing alcohol or vinegar. If the temperature with this treatment be not sufficiently reduced, the hands and forearms may be immersed in the lotion, while the patient is still in bed, or a double thickness of muslin or linen, frequently wrung out in ice water, may be placed upon

the hands and arms, which is soothing to the patient, is not attended by any shock, and, continued two or three hours, usually reduces temperature. Joynt advises that the throat and nares be thoroughly syringed out every three or four hours with a strong solution of boric acid in glycerin. After irrigation, he finds painting the ulcerated structures with the thick boroglycerin, or with glycerin of iodine, or better with glycerin of thymol (1 in 10.50), a valuable addition. Confinement to bed, free ventilation of the sick-room, a constant temperature of about 60 to 65 degrees F., milk diet, and flannel worn next the skin, are the broad principles of management during the acute stage. Free ventilation is an important point; a scarlet fever patient cannot have too much fresh air; the maintenance of a warm temperature is a secondary matter compared to it. A hot bath daily, and sponging the body over with acidulated water or a weak solution of glycerin, is refreshing, and enables the skin to act. Milk diluted with barley, soda, or lime water, or boiled, or made into whey, should form the staple diet. Panceatized and peptonized milk is more readily digested than plain milk. Cream is valuable for children. Beef tea often sickens and causes diarrhea in children; as ordinarily made it is stimulating rather than nutritious, but when prepared by digesting for a few hours, in a warm place, finely minced raw meat in water acidulated with hydrochloric acid, a highly nutritious fluid is obtained; eggs are excellent. Sipping hot water or coffee assuages thirst, and the patient should be allowed to drink as much water as he desires, provided the quantity is not excessive. Jamieson accelerates desquamation, and therefore shortening the infective period of scarlet fever. Carbolic acid in the proportion of 3 per cent. in ointment or oil, constitutes the most reliable agent. With this, however, should be combined daily ablution with soap and warm water, so as to remove as rapidly and as completely as possible the dry epidermic particles as soon as these become loose, the carbolized oil or ointment being rubbed on the surface after it is dried. A better means, however, lies in the action of resorcin. Rubbed on as an ointment, it did not produce the desired effect in scarlet fever. A resorcin soap, indeed, would have amply fulfilled the indications, but on inquiry it was found that there were chemical difficulties in the way of manufacturing such. When resorcin was incorporated with ordinary hard or soft soap a molecular change took place in the drug, its constituents broke up and formed new combinations; in fact, it was no longer a resorcin soap. But in process of time, by a simple procedure, Eichhoff succeeded in obtaining a stable resorcin soap. He found that when a soap was made chemically acid by the addition of salicylic acid, a moderate amount of resorcin quite sufficient for our purpose could be combined with it. A 3 per cent. resorcin salicylic superfatted soap is now prepared and when this soap is used to wash cases of scarlet fever, warm water being always employed from the commencement to the close of desquamation, a notable diminution of the period occupied by "peeling" follows.

A remarkable surgical feat was achieved by M. Quenu, a surgeon at the Cochin Hospital in Paris, who successfully stitched together the wounded parts of the heart of a young woman who had stabbed herself. The patient was able to leave the hospital in good health twelve days after the operation.

THE SUCCESSFUL TREATMENT OF DYSPEPSIA.

BY H. TAYLOR, M.D.

SOME years ago the well-known Dujardin Beaumetz published the reports of some simple measures which enable him to gain a knowledge of the chemical changes taking place in the stomach, without making an examination of the gastric juice, which is often a matter of difficulty. These are three in number: (1) The use of the experimental meal. (2) The examination of the gastric and intestinal gases. (3) The examination of the fæces. Dyspepsia, whether caused by a deficiency of certain chemical changes in the stomach and intestine, by want of functional power or by neuralgia of the nerves of these organs, may be divided into two large groups, irritative dyspepsia and a tonic dyspepsia. The first group is characterized by hyperchlorhydria, cramps, vomiting, pain and diarrhœa, while the second group by achlorhydria, paresis of the muscular coat, putridity, and, lastly, constipation. Dujardin Beaumetz advises in both these groups special diets, the use of baths, and antiseptic cachets. The diet should be vegetarian, being composed of eggs, farinaceous food, green vegetables and fruit. The severity of this regimen must be in proportion to the intensity of the dyspeptic symptoms. In very severe cases, only milk and eggs ought to be allowed, but in cases of medium severity, add starchy food, green vegetables and boiled fruit, and lastly in cases of a milder type, allow meat, well done, and meat jellies. As for baths, they may be used in all cases, either in the form of cold douches, or Scottish douches, or as warm, alcoholic lotions. He gives, where diarrhœa is present:

℞ Salol.....Cretæ Præparatæ, aa 10 gms.
Bismuth Salicycl.....2½ drs.
Sig. To be made up into 30 cachets.

In cases where constipation is a symptom:

℞ Salol.....Sod. Bicard aa 10 gms.
Benzonaphthol
Sig. To be made up into 30 cachets.

In cases where there is a great deal of flatulence:

℞ Benzonaphthol...Hydr. Magn aa 10 gms.
Bismuth Salicyl
Sig. To be made up into 30 cachets.

He gives the experimental repast after fasting in the morning, and every day at the same hour, being composed of the same kinds of food, either "café au lait" or "thé au lait" with a "crescent roll" and butter, according to the preference of the patients. The quantity of these food stuffs should always be the same. If functional troubles set in, it gives rise to a series of symptoms varying according to whether there be irritation of the stomach or atony of the organ. If irritation be present, there is a sensation of warmth, then of burning, with acid eructations; in severe cases there are real cramps, more or less painful, or vomiting appears. In atonic dyspepsia there are eructations having occasionally a very disagreeable odor, then a sensation of a heavy weight, which persists for a longer or shorter time. In both these forms of dyspepsia, intestinal troubles are produced, three, four, or several hours after the ingestion of the experimental repast. When such symptoms are produced after the morning meal, either in cases of irritative dyspepsia or of tonic dyspepsia, the patient should observe the greatest caution as regards luncheon and dinner. Banish meat from repasts and confine patient to eggs, carbo hydrates and vegetables. If he is accustomed to drink milk, he ought to have some with his meals, or he may substitute aerated alkaline water, either

by itself, or with the addition of a little white wine, or extract of malt. Should this first meal in the morning be partaken of without the least inconvenience, the patient can do without the cachets, and allow more latitude in his diet. Every intelligent dyspeptic patient ought with his doctor's guidance to be able to regulate his diet and his medicines according to the signs furnished by the result of the experimental repast, while an examination of the gases and the fæces will give information equally important to the dyspeptic patients. The gases generated in the stomach will, by their odor of putridity, or of acidity, enable us to form an opinion as to the presence of stomachic atony or irritability. As to the intestinal gases, their odor and abundance give us valuable information. The intestinal gases have sometimes an odor of putridity of great intensity and persistence, strongly reminding one of the odor of gangrene. Prescribe here salicylate of bismuth or salol. As regards the fæces, they are of the very greatest importance, and it is highly desirable that all houses should be fitted up with water closets of the kinds which allow of separation between solids and liquids. In a great number of dyspeptic cases, and particularly in gastric dyspepsia accompanied by diarrhœa, the fæces look greasy and have a putrid odor, different from that of healthy fæces. In irritative dyspepsia with hyperchlorhydria the fæces are characterized by another important feature, acidity. Healthy fæces are alkaline; but they may become neutral and even acid, which can easily be demonstrated by the use of turmeric paper. This acidity is due to the fact that the hyperchlorhydria of the stomach is such that when the chyme has passed on, the bile and the pancreatic juice are insufficient to neutralize it, and as the digestion in the intestine can be carried on only in an alkaline medium, two classes of phenomena may be observed as results. An incomplete intestinal digestion with colic and borborygmus; on the other hand, acid fæces. These acid fæces irritate, by their presence, the larger intestine which expels them more or less promptly; hence, frequent stools, the passage of which is accompanied by heat and burning at the anus. Just as in the case of the experimental repast, these signs may guide the dyspepsia patient; and whether the case be one of constipation, diarrhœa or acid fæces, he can easily regulate the treatment. Do not allow game, fish, molluscæ, shell fish, cabbage, because in the largest number of patients these food stuffs produce intestinal troubles, and particularly gases and putrid stools.

Probably five per cent. of all cases of stomach affections present more or less marked ærophagia; the subjects may be unconscious of it, merely complaining of the eructation of gases and more or less flatulence. Mathieu has established that frequently what they suppose to be an eructation is in reality an involuntary swallowing of air, for the flame of a lighted candle held to the mouth does not blow out, but remains immovable, showing that there is actually no emission of air. Some times the air is belched up as soon as it enters the stomach, or it accumulates until the distension becomes marked and the air escapes into the intestine with a characteristic sound. This swallowing of air may occur more than five thousand times during the day, but not frequently at night or when the patient is absorbed in work. The swallowed air may present the complete picture of severe gastrointestinal flatulence. The ærophagia of nervous dyspepsia, the spastic ærophagia of severe neurasthenia and hysteria and the secondary ærophagia accompanying a severe gastric affection are the various forms. As soon as the subjects can be convinced that their troubles are due to this cause they easily conquer it. The spasmodic swallowing can be controlled or prevented by keeping the mouth open, using something to serve as a gag, if necessary, but the underlying dyspepsia must be treated, and another indication is for measures to reduce the excitability of the stomach; preferring for this codien and "cherry laurel water," but morphin and other antispasmodics may be necessary. To abort an attack use a saturated solution of chloroform, given in tablespoonfuls at the beginning and during an attack, mixed with water, to a maxium of 4 to 6 tablespoonfuls a day. Antiseptics for the intestines are not needed, for the gaseous fermentations to which the flatulence was ascribed does not exist in reality.

Starzhesko found, experimentally, that bitters increase the psychical stream of gastric secretion, but it remains to be determined by further investigations whether this increase is the result of a simple reflex, or of a complicated nervous mechanism, involving the cerebral cortex. Small amounts of bitters must be used, for the administration of large doses has the opposite effect from that desired, and the repeated use of large amounts may produce a permanent hyposecretion in the stomach. Bitters must always be administered in such form as to excite the nerves of taste while the drugs are taken; the use of bitters in the form of pills and wafers or capsules is not rational; always give before eating, the best time being ten or fifteen minutes before.

Conventionality, fashion or habit too often determine the frequency of meals and the quantity of food taken; Rabagliati, based on his experience in feeding patients twice instead of three to six times daily, believes that a large proportion of sickness is produced by too frequent and abundant feeding, for three pounds avoirdupois is not a reasonable daily average of food, but one pound is nearer the proper quantity. The theory that each man is the best judge of his own diet is a poor one, while an exclusive milk or beef diet will eventually lead to waste or anæmia if the patient is kept at work. Bettman protests against the taking of large amounts of hot water, believing it harmful in cases of atonic dyspepsia, and only safe when the patient is well nourished, as then there is strong gastric motility. Both these contributions are valuable and timely, for many victims of dyspepsia will recover when meals are limited to breakfast and late dinner. The stomach requires time for recuperation, which is impossible if hearty luncheons are indulged in. The stomach tube proves that each man is not the best judge of his own diet. A healthy stomach may become hyperæsthetic and resentful, if for long time it is only required to manage soft and easily digested foods. Strength comes from use; but the other extreme is quite as harmful, and the digestive energy is squandered and weakened and poor digestion follows the indiscriminate and irregular eating of irritating and indigestible foods. As an example of the tolerance to which the stomach has been educated, Bettman cites a most extraordinary instance. A man, thirty-two years old, had for years followed the practice of swallowing glass and stones as an exhibition. He had taken nine and a half pounds of stones on a single occasion, without pain or discomfort. He was ultimately attacked with severe pain, was sent to a hospital, and sixty stones were removed from the rectum by means of the fingers and

a scoop, after which he made a good recovery. On the practice of drinking hot water, so much indulged in without definite reason, it should be said that there is authority for believing that very hot water acts as a temporary gastric stimulant. Warm water soothes an irritable stomach, and the emesis supposed to follow its taking in very large psyhical in its effect. Bulkley contends that milk taken an hour before meals, unmixed with other foods and unpeptonized, is absorbed at once into the blood without undergoing the process of digestion. If not already alkaline a little bicarbonate of soda should be added to the milk, and it is necessary for the patient to lie down for an hour after taking it. It is a fact that milk given in this way disappears very rapidly from the stomach. It is also known that unpeptonized milk is much more quickly absorbed from the rectum than is milk peptonized. These facts would seem to favor Bulkley's theory; but, on the other hand, it is well known that if milk is removed from the stomach shortly after it is swallowed it shows coagulation from the effect of the lab ferment. It is probable that digestion goes on so rapidly, and to the patient so unconsciously, that it has given rise to Bulkley's idea.

Moritz has pointed out that the resorptive power of the stomach has been overestimated, and for many drugs really amounts to nothing. The problem is how rapidly the drug will be propelled into the intestines where resorption occurs. Von Mering has shown that water and weak saline solution leave the stomach rather quickly, one litre disappearing in from one-half to three-fourths of an hour; a glass of water disappearing in twenty minutes, but when the water is acid or charged, or when it appears in the form of soups, milk, or beer, the stomach is stimulated, secretion begins, the pylorus closes, and absorption is delayed; water taken on an empty stomach disappears more quickly than when taken with food. The most rapid effect of a drug is produced when it is given on an empty stomach, dissolved and largely diluted with water. Drugs that are insoluble in the stomach, such as salicylic acid, are best given in glutoid capsules (gelatin hardened by formaldehyde) that are disgested in the intestin only; in gastric atony and dilatation it is futile to administer drugs by the mouth and expect a prompt and reliable action. Chloroform, naphtol, saccharine, and most metallic salts seriously interfere with the digestive process, and sometimes are sufficient to practically prevent it; they should be given, therefore, some time after, rather than just before meals. Oil should not be administered before meals, for it coats the mucosa and prevents secretion. As a class, women drink very little water, largely a matter of habit and to save inconvenience. Algeron recommends water containing chloride of sodium in atony of the stomach and large intestine, and the alkoline saline waters in chronic gastritis and in hepatic disease. All forms of mineral waters are contraindicated in dilation of the stomach. Vomiting sometimes occurs as a cyclic affection where the vomiting is only one feature in an interesting syndrome. The affection usually occurs in delicate children, and the attacks appear at intervals of from two or three months and last for a few days, after which the child is in usual health. The attacks are preceded by a prodromal period in which lassitude, a coated tongue, offensive breath, rings about the eyes, and gastric discomfort are the chief symptoms. The attacks come on abruptly, with severe and uncontrollable vomiting, made worse by taking food or drink. In the cases that I have seen there was an elevation of temperature, and the gastric contents showed a temporary excess of free hydrochloric acid. The attack is followed with great prostration, but the convalescence is rapid. Some observers state that the paroxysms recur regardless of dietetic indiscretion or psychical disturbance. I have found that over fatigue is apt to precipitate an attack in those predisposed to the affection. I have known alkaline sedatives, like the milk of magnesia, to afford some relief, but usually nothing does much good until the storm exhausts itself.

In nervous vomiting, methol in 1 grain doses, with sodium bicarbonate, is recommended by Meis. Mitchell recommends for this condition the application of compresses wrung out of ice water and changed every minute for a quarter of an hour.

It is now possible to explain the slow passage of fats from the stomach, for they are unlike either proteids or carbohydrates in that they are seldom eaten as a pure, or even predominant, foodstuff. When fats in almost pure form are fed to animals the gastric peristalsis is often observed to be slight, and, according to Pawlow, the flow of gastric juice is not sustained. When fats enter the duodenum, however, they cause the same reflex that acid causes. Thus, by a diminution of the influence opening the pylorus, and by a continuance of the influence closing it, the fats are long retained in the stomach, and only slowly passed along. According to Cannon, the degree of contraction of the pyloric sphincter when at rest varies, but the effect of particles of food in keeping the sphincter contracted indicates that the mere mechanical presence of food in the stomach will produce a closure of the pylorus; after food has reached the stomach all evidence points to the probability that the signal for a movement onward into the intestine is the appearance of free acid. Free acid on the stomach side of the pylorus would thus be the stimulus to open the pylorus and initiate the chemical control of the sphincter. The opening of the pylorus permits the exit of a portion of the acid chyme. There is proof that acid in the duodenum closes the pylorus and keeps it closed. Thus the acid chyme would go forth from the stomach, and, with its acid, close the gate behind it; acid in the duodenum is known to be the stimulus for the flow of the alkaline secretions of the pancreas. No inorganic acid is normally present beyond the first few inches of the small intestine. The acid is here neutralized; as this neutralizing of the acid proceeds the stimulus to the closure of the pylorus is weakened, until the acid in the stomach can again open the pylorus. Again the food would pass out and the gate close till the duodenal changes finish their slower course. In this way, automatically, carbohydrates, on which the stomach works no change, would go early and quickly into the intestine, where they meet their proper ferment; thus, automatically, proteids would be retained in the stomach to suffer alteration by the gastric juice, and only after such alteration be permitted to go on.

Hoffmann has reported the metabolism in Schlatter's well-known case of total resection of the stomach as follows: Six and a half months after the operation the patient had gained 5.4 kilog. in weight; the amount of nitrogen present in the stools varied within normal limits, but during the six days a complete nitrogenous balance was not obtained as in health. There was a retention of from 0.1 grm. to 1.4 grms. of nitrogen; this retention is known to occur in convalescence from acute illnesses, etc. There was no increase in weight during

the first period of observation. A month and a half later a further investigation was made with a more varied diet, and here the absence of the stomach seemed of no importance. A nitrogenous balance could now be established, showing that the regeneration of the blood was so far complete that there was no longer any need of retention of nitrogen. The retention of phosphorus was also marked. Hoffman found that fatty matters were satisfactorily dealt with, so that of 8.5 gms. taken only 4.5 gms. were excreted, showing how incorrect it is to treat patients suffering from chronic stomach disorders with as little food as possible. The question of the action of hydrochloric acid was studied upon putrefactive processes, and he concludes that the absence of the acid in this case was without influence upon these putrefactive processes in the alimentary canal. The administration of hydrochloric acid as a disinfectant of the intestinal contents being useless.

All chlorotic and anæmic patients do not bear iron equally well, and the metal may give rise to so much gastric disturbance as to render its use impossible. In cases in which the gastric contents are already too acid during digestion iron accentuates the hyperacidity of the gastric juice, aggravates the dyspeptic symptoms which are usually present in anæmia and chlorosis. In these cases the digestive affections must be set right before iron is administered. In cases, however, in which the secretion of HCl is normal or administered, iron may often do good service in stimulating the gastric mucous membrane to secretion. All experiments tend to show the necessity of ascertaining the condition of the stomach prescribing iron. Colombo, experimenting on dogs with gastric and biliary fistulæ, has estimated the effect of massage on the amount and quality of the gastric juice, bile, and renal secretion. The gastric juice which came through the fistula in the space of two hours was more than double that which flowed without massage. Massage for five minutes made no difference, but when continued for fifteen minutes the secretion reached its maximum; if continued longer the amount remained about same, but the quality was poorer. As regards the bile, the best results are obtained by ten minutes' percussion, followed by ten minutes' friction and kneading. Ten minutes abdominal massage also increased the amount of urine; slight traces of albumin were observed in the first few minutes after massage, but this was only transitory. In each case the watery part of the secretion was increased out of proportion to the specific elements. The observed increase being due to a greater flow of blood and better filtration. The albuminuria, which manifests itself in the course of dyspepsia, presents peculiar characteristics, which permit its diagnosis not only from Bright's disease but also from other functional albuminurias. The patient in whom this variety of albuminuria is encountered are affected with gastric hyperæsthesia, variable distension of the stomach, increase in the volume of the liver, constipation, and fætal accumulation in the bowel, complaining of a sensation of weakness and fatigue; they are thin and have vertigo, but never present œdema. Their urine shows an irregular albuminuria and sometimes a continuous and permanent albuminuria. This undergoes considerable variation, according to the diet of the patient. The albumin is composed of serum without globulin. The urine never contains tubular cases, but a certain quantity of indican and crystals of oxlate of calcium are found. The state of nutrition and the organic and respiratory changes will furnish other signs, which will aid in differentiating dyspeptic albuminuria from other varieties. Alimentary albuminuria can be cured when it is properly treated in the beginning, that is, when it exists only in an intermittent form, but when it becomes continuous, it is cured only in from 30 to 35 per cent. of cases. The treatment is extremely simple and ought to be based, during the first stage at least, on the state of the digestive tract. The diet forms the prime element of treatment and varies with each case; if there is less albumin with animal diet than with vegetable, animal diet should be prescribed, and vice versa. The diet should be mixed if it is found that there is less albumin under such conditions. It is almost useless to call attention to the fact that it is nearly always necessary to have recourse to a milk diet. This should be suspended if the patient begins to grow thin. In hyperacidity, Roux arrives at the following conclusions with respect to those several forms of dyspepsia which are classed under the term of Reichmann's disease: (1) It is better to call this disease the "syndrome" of Reichmann, than Reichmann's disease; (2) It is an exaggeration to look upon this "syndrome" as being in all cases a clinical sign of motor insufficiency of the stomach, due almost entirely to an incomplete organic stenosis of the pylorus or duodenum; (3) In most cases the secretory activity of the gastric mucous membrane is increased; even before hypersecretion occurs, excess of hydrochloric acid can be detected; (4) A positive diagnosis of the "syndrome" can only be made when the stomach contents contain a large excess of hydrochloric acid after a test meal taken on an empty stomach, in addition to the presence of active gastric juice in the stomach before breakfast; (5) Intermediate forms between simple hyperacidity and hyperacidity combined with hypersecretion can be demonstrated; (6) There is no doubt, however, that stasis of the stomach contents plays an important rôle in the development of the symptoms, but that it is not alone sufficient to cause the "syndrome," although removal of the contents through the stomach tube affords relief.

Litten's phenomenon is described by Le Fevre in his excellent book on Physical Diagnosis. If a patient not too fat is so placed that lying on his back the light falls upon the chest from the direction of the feet only, the observer, standing at the side, sees a narrow shadow moving downward when a full, deep breath is taken. This shadow is due to expansion of lower ribs, caused by the slow separation (by the descent of the diaphragm) of the two surfaces of the pleura over the so-called complemental spaces, and the gradual extension of the lower borders of the lungs, with filling out of the intercostal spaces. This phenomenon is modified or absent in all conditions that (a) change the normal relation of the two surfaces of the pleura in the complemental space, such as effusion in the pleural cavity; (b) interfere with the descent of the diaphragm, as adhesions of the two pleural surfaces; or (c) prevent the lung from distending, as in pneumonia at the base, pulmonary emphysema, fibroid induration and tubercular infiltration, especially at the apex. One may often by means of this sign diagnose slight pleuritic effusions from hepatic and splenic enlargements, as subdiaphragmatic conditions do not interfere with the descent of that muscle, unless attended with pain or greatly increased intra-abdominal pressure.

PHYSIOLOGIC RHYTHM.

BY F. B. BRUBAKER, M.D., MIFFLINGBURG, PA.

THE physician who has well attended to a study of the collateral sciences of medicine must surely be cognizant of the fact but briefly alluded to in the preceding essay that all physical phenomena eventually resolve themselves into force. We need not pause to prove how or why this is so, for it must be self-evident that he who would become acquainted with the whole of medicine, must first become acquainted with the whole of force.

Health therefore we would describe as the rhythmic flow of physical force, and disease a broken or impaired flow, taking for granted the reader's entire familiarity with the persistence of force and motion.

Should we assume in the present instance that ultimately all physical phenomena resolves itself into heat, and that the measure of life therefore is the measure of heat terrestrially expressed, and that heat being energy is likewise motion, and that all well-ordered motion is rhythmic to which interpretation we now apply ourselves, we fear we might too far anticipate our own argument, and yet who dare deny that organic growth does not take place in the direction of least resistance? this being first manifestly so in the inorganic world, a manifest duality which pervades not only physical phenomena but the whole of inanimate things as well, which, expressed in appropriate terms becomes the well-known law of attraction and repulsion, whose ultimate again is motion, therefore from universally co-existent forces of attraction and repulsion, there result certain laws of direction of all movement. Where attractive forces alone are concerned, or rather are alone appreciable, movement takes place along the resultant, which is usually known as the line of greatest attraction. Where repulsive forces alone are concerned, or rather are alone appreciable, movement takes place along their resultant, which is usually known as the line of least resistance. And where both attractive and repulsive forces are concerned, or are appreciable, movement takes place along the resultant of all tractions and resistances. Motion and all physical phenomena, no matter where found, eventually resolve into atoms and molecules, and is relative to all other phenomena. It always follows the line of greatest traction, or the line of least resistance, or the resultant of the two, the resultant of the two being alone absolute, inasmuch as it is the clashing of forces that produces rhythm, and not the uninterrupted flow. Movement, therefore, set up in any direction in itself, becomes a cause of further movement in the same direction, *since it is the embodiment of a surplus force in that direction.* It further follows that the direction of movement can rarely if ever be perfectly straight. For matter in motion to pursue continuously the exact line in which it sets out, the forces of attraction and repulsion must be symmetrically disposed around its path and the chances against this are infinitely great. Having learned, therefore, that in proportion as the forces at work are numerous and varied, so the curve a moving body describes is complex, and remembering that nowhere as in the onflow of physical phenomena are these forces so numerically complex, it therefore results as a necessary correlary that every motion takes place along the line of greatest traction, or that of least resistance, or the resultant of these two. We have learned that the setting up of motion along a certain line, becomes a cause of its continuance along that line, and that change of relations to that line by external forces, renders it indirect, and that the degree of this indirectness, increases with every addition to the number of influences at work. When, therefore, but one force which otherwise might for a moment occur along a straight line, intersects with another, a slight curve is produced, and as all things both within and without, are held together, by reason of these very laws, we can at once comprehend the complexity of the subject, and likewise its beautiful consequent, viz.: Rhythm. What, then, is rhythm? Physically, the co-efficient or resultant movement of acceleration and inhibition is life from the material standpoint. In the vegetable kingdom the formation of the root furnishes a beautiful illustration of the law of least resistance, for it grows by insinuating itself cell by cell through the interstices of the soil, and by such minute additions increases, winding and twisting wherever the obstacles it meets in its path determine, and growing most, where nutritive materials are supplied. Appearing as they do in all their strength and adaptation under ground, we are sometimes led to view them as forcefully placed, but that this is not so, is only too apparent inasmuch as they were as gently led on and cell added to cell as noiselessly as the falling of the dew.

A bubble rising rapidly in water describes a spiral, closely resembling a cork-screw, and a body of moderate specific gravity dropped into water, may be seen to fall in a curved direction the spiral tendency of which may be distinctly observed. A general law therefore is reducible, that throughout all of organic nature, the spiral form is more or less distinctly marked.

This being so, because all motion under resistance takes a spiral direction. The universal spiral arrangement of the leaves around the stems of plants sufficing for an apt illustration. If a flower bud be opened at an early period, the stamens will be found as if moulded in the cavity between the pistil and the corolla which cavity the antlers exactly fill, the stalks lengthening subsequently.

The heart commences as a spiral turn, and in its perfect form a manifest spiral may be traced through the left ventricle, right ventricle, right auricle, left auricle and appendix. The spiral turn in which the heart commences being but a coincident result of the lengthening under a limit of the cellular mass of which it then consists. Seeing, therefore, that developmently all organic forces tend to the spiral or circular, because of being acted on by contrary or otherwise opposing forces, it is not at all surprising to note that all resulting phenomena is rhythmic, neither indeed that vascularity (the whole of tangible and visible phenomena) is perseveringly so, the tractive or gravitating force of the earth itself serving to establish to all other physical force manifest, the right angle, the same of course being opposite, currents along which either blood, bile, lymph, chyle or what-not, find their way, being lines of least resistance, so that in this way has the formative become the formed, and the resistent the unformed. The natural, normal, and interrupted, being the ebb and flow of rhythm, while the unnatural, interrupted, and diseased, still strives to preserve the same in all varicosity. Vascularity therefore resolving itself into force or motion, is the natural or normal termination of all healthful activity whose interruption even to the molecule, is a

first step towards disease.

Perfect equilibrium of the manifold forces comprising vascularity which in the ultimate is nutritional, is therefore, after all, the measure of a man's days, be they threescore or ten. Disturb the equilibrium even to a molecule, and you awaken some compensatory force, even to the extent of a molecule, through which restoration takes place, if indeed the balance is to be maintained, or on the other hand, if lost, establishes a train of disturbance whose total is death. Restoration of equilibrium between the points at which the forces have either increased, or decreased, disproportionally, must take place through some channel if the debt is paid, or, if not, becomes in all organic effect, *cumulative.*

If action of the tissues traversed involves any reaction upon them, deduced from the obstructive power, then a subsequent motion between these two points, will meet with less resistance along this channel, than the previous motion met with, and will consequently take this channel still more decidedly, which by every repetition will still further diminish the resistance offered by this route. Hence will eventually be established a line of comunication differing greatly from the surrounding tissue, and which constitutes the abnormal, the vicarious, the disease producing and death dealing. Hence therefore our formula resolves itself into a very simple proposition, although intrinsically delicate and intricate, forcing itself upon our attention all too early, by headaches, inflammations, œdemas, etc.

Let us come a step nearer our subject. Vascular excitement with dilatation and turgescence (plethora), characterize the functional activity and enlargement of the spleen. Its capsule expands. Contraction of the elastic capsule and muscular fibre in it, characterize the reduction of the spleen. Now this to my mind is the whole of physical phenomena, remembering it to be normal and but one-half expressed, viz.: the protoplasmic. Resulting therefrom by the opposition or clashing of forces we derive its rythm, made up of course by its active enlargement and its passive reduction. In the maximum stage of the rhythm, the spleen performs its functions, and in the minimum stage of the rhythm, the spleen gets its rest, and self repair. Another feature being, the tortuosity of its artery, which adds to the power of functional activity and prevents sudden motion or enlargement. Indeed every organ in the body presents like phenomena, the process of vascularity being manifestly so, and therefore easiest of understanding, the systole and diastole of which has been much studied.

Expansion and contraction therefore wherever found result in rhythm.

The rhythm of the bladder then is its contraction and dilatation, for it possesses a systole and diastole, as truly as the heart, its rhythm to a certain extent being lost sight of, because the diastole is so much longer than the systole, requiring hours for its diastole to complete itself, while the systole may be completed in a few minutes or less. And yet, remembering that even in so apparently a rhythmic an organ as the heart the diastole of the ventricle is two-fifths of a second longer than the systole, we find that physiologic rhythm is not alone a measure of time.

The rhythm of the liver consists of its enlargement during functional activity and its return to normal during rest. The rhythm being made possible by the elasticity of the peritoneum which surrounds it, by its surrounding elastic capsule, by the elastic tissue of Glissons capsule which surrounds the vessels all through the liver, and by the dilatability of the blood vessels. Hence the liver gland is capable of enlargement and contraction. Passing through its active rhythm by vascular excitement, it attracts large quantities of fluid from which it makes bile, glycogen and urea, to return again to its normal by its elastic capsule, forcing the newly formed products out through the tubules, to be employed in digestion.

This same reasoning applies likewise to the pancreas and kidney, to ovary and testicle, for to them also does the law of vascular engorgement and elastic capsule or other subserving mechanism apply, to induce and sustain rhythm.

One of the most beautiful examples of continuous physiologic rhythm is to be found in the nutritional tract itself, for, beginning with the œsophagus and ending with the large bowel, a sustained and retained rhythmic action is apparent.

But why should we multiply instances? If the reader has now firmly fixed in his mind the fact that a study of physiologic rhythm, is absolutely necessary to a proper understanding of the higher problems of science, to which none better or with more right belongs the study of medicine, I shall have succeeded in my endeavor as I had hoped. Vascularity therefore, whether considered mediately or immediately, is composed of two factors, a duality, the one contractive and the other dilative, these two being nutritional, which being composed of forces antagonistic, resolve themselves into rhythm.

President Roosevelt's Action Against Tuberculosis is recorded in the lay press; and this certainly makes pleasant reading for the physician. An order has been issued to all departments of the government service in Washington to the end that this disease may be prevented and eliminated among employees. Rules prepared by a committee appointed by Executive order are to be printed and transmitted to all the Federal buildings, in which they must be conspicuously displayed. Each department must ascertain the names of its employees afflicted with tuberculosis and to present to them these printed rules, the non-observance of which shall be considered a just cause for dismissal. Any employee concerning whom a diagnosis of consumption is doubtful must visit one of the government laboratories for examination and must present to the department from its director or other authorized officer a certificate showing the result of the examination. If such a laboratory is not accessible the examination is to be made at government expense. The surgeons general of the army, the navy and of the public health and marine hospital service, are to cause a thorough sanitary inspection (the latter also of all departments not military or naval) of the public buildings and workshops under their respective departments and may detail one or more sanitary boards for this purpose, who shall report upon unsanitary conditions immediately remedial and such as require structural changes. These boards are to receive every assistance from the executive heads of all buildings or workshops which they visit; and these boards must make reports to the Surgeon General of their respective services, who shall submit them to the committee we have mentioned. And this committee are to transmit in turn a full report with recommendations to the Executive.

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No truth so sublime but it may be trivial to-morrow in the light of new thought.—*Emerson.*

RUTHLESS NOISES.

THERE are those who question whether civilization is, after all, worth while; whether that part of humankind which lives close to nature is not on the whole better off. Such a view is extreme and easy of refutation; nevertheless we certainly have oftentimes to pay a dreadful price for the development we have attained to, especially those of us who live in cities. So really terrible is the strain of modern urban life, that it has been computed such communities as Paris, London, New York and Chicago would become extinct within a few generations were it not for the influx of fresh minds and bodies from rural sources. Among baneful factors we note here the din of great cities. Many such noises are inevitable and must be endured. But many others arise purely and simply from such lack of consideration as would shame the primitive brute. We note here in this relation some recent instances which have become a part of metropolitan history.

Excavations had been making in a hotel and residence district in order that a huge store, to cover the most of a city block, might be built. Day and night, throughout the twenty-four hours, there was the rumbling of wagons filled with stone and dirt, the shouts and profanities of men, the drilling of a hundred steam drills and frequent blasting. Such was the insane eagerness to get the place ready for business that absolutely no humane consideration had weight. How often is "business is business" the only answer made to such protestations, as if there were nothing else in life worth while. Several citizens combined finally to have the excavating contractors haled to court. Some of the testimony related in the lay press follows: One witness was compelled to leave his home and go to a sanitarium in order to recover the sleep he had lost through many nights. "Now, as a matter of fact," asks the lawyer of the defendants, after having asked a number of irrelevant questions, "haven't you an irritable disposition?" Another witness had to leave the stand, being weak and about to faint. The defendant's lawyer declared the trouble was not with the noises, but with those who made the complaint, who were naturally affected with weak nerves. He was of the opinion that such a trifle as blasting during the night should not disturb the slumbers of a normally constituted individual. Besides, what were the complainants going to do about it, anyway? There was no statute covering the offenses alleged. We find in this state of things no civilization at all; not even common decency.

A huge place of amusement was recently building. One would think that such a structure need not be unduly hastened, that it could be erected during normal working hours. Nevertheless there was constant blasting at night, with all the concomitant noises. A dozen steam drills and four steam cranes were constantly at work. Indeed, there was no cessation at the end of the sixth day; the work of building was continued throughout the day and the night of the seventh day as well. Not only was the pious Sabbatarian outraged here, but also every citizen capable of wholesome sober sentiments.

But it is the very sick in hospitals whom ruthless noises have reduced to a pitiful condition, whose lives have in some instances certainly been sacrificed by means of them. "Picture to yourself," writes Dr. M. S. Gregory, of Bellevue, which lies upon the East River shore, "a patient in the agony of death, who is suddenly startled by the shrill noises of prolonged whistles! Then, again, many patients suffering from typhoid, meningitis and other serious illness will become annoyed by the least noise or disturbance. To these restful sleep is of paramount importance and frequently such disturbances may cause a relapse or turn the scale against them. In many delirious patients an hour's rest or sleep may mean life." The work of the physicians and nurses in the psychopathic pavilions is made most trying and difficult by the whistling from boats. Many of the insane become frenzied by these noises; many imagine the incessant whistling is meant for them, and that it means their death-knell. One such sufferer will make chaos in a whole ward.

On some occasions the shrieking of tug and steamboat whistles is incessant; in one night 2,500 such noises were counted. Little tugs oftentimes carry enormous and altogether disproportionate whistles. Captains call by this means their crews which have been ashore for entertainment. There are many "sirens" which are, in addition to their diabolical

screeching, an actual menace to navigation, because they render inaudible the signals from other boats. It has been estimated that eighty per cent. of these river and harbor noises are occasionless and are the result of sheer rowdyism.

The condition of things which obtains in New York City has become, it seems, a matter of almost national moment. In Pennsylvania towns there is protest against the clanging of foundries and the noises in mills and factories. In Seattle on the western coast there is a vigorous movement on foot to secure decent municipal quiet. In many cities there is protest against the unduly loud trolley-car gongs, the slamming of their doors, and the racket and groaning of their badly oiled machinery. In Massachusetts something has recently been accomplished by the force of public opinion, which is in accord with the idea that a community, in proportion as it becomes civilized, will suppress nuisances in the form of unnecessary noises—that violent noises are gravely detrimental to the health, not only of invalids, but of the strong and robust as well. The courts of that state have decided objectionable noises are actionable, and it is to be assumed that under the common law that principle can and will be generally upheld in other commonwealths and communities.

THE EFFECT OF TOBACCO SMOKE ON THE HUMAN ORGANISM.

MANY pleasant papers have been written on the use of tobacco and many unpleasant tracts have been thrown at the user of the "slow burning weed" which Sir Walter Raleigh rescued for humanity's weal or woe. Undoubtedly no greater human solace is known to those who love the weed and nothing seems more ridiculous to the tobacco hater. Leonidas Hubbard, in his terrible experiences in Laborador, which resulted in his death under most tragic circumstances, deplored the fact that he did not love tobacco, for it seemed such a tranquilizer to his two suffering frozen companions.

The scientists have not left tobacco alone and we now know what a complex poison we are introducing to our inner man. Thus Wyatt Wingrave tells us of the horrors of tobacco nerve deafness. He finds that (1) That there was an impairment of color sense in eight of (unattributable to other causes) occurring in heavy smokers. (2) That the loss of low tones in 50 per cent. suggests an auditory equivalent for a recognizable ocular lesion. (3) That the disease was symmetrical. (4) That there was an impairment of color sense in eight of them, and definite scotoma in four cases. (5) That 80 per cent. showed marked improvement on abstinence from tobacco supplemented by drug treatment; three were cured.

Yet deluded man continues to use the weed; nay, he may even smoke while he reads this lugubrious report of Dr. Wingrave.

We know that besides nicotine, tobacco contains nicoteanine, collidine and other pyridin derivatives, acids, carbon monoxide, resins, ammoniacal salts, and —listen, ye ladies of the Women's Christian Temperance Union!—prussic acid, one of the deadliest of all quick-acting poisons. Two drops of nicotine will kill a dog in less than a minute, placed on its tongue, while eight drops will kill a horse, and tobacco contains two to eight per cent. of nicotine. "True," cries the tobacco smoker, "but this is changed by smoking into other bodies." Le Bon, who is as good an authority as his name implies, has proved that these other pyridin bodies are as poisonous as nicotine itself, but Petit who is, we hope, a greater authority than his name suggests, throws out the belief that these bodies do not condense in the warm mouth and are mostly exhaled; therefore the physiological effect of ordinary smoking is not marked. He believes susceptible people are more affected by breathing the air of a room full of tobacco smoke than the smokers themselves, which is poetic justice, highly developed.

The *London Lancet* believes that the gaseous products of the incomplete combusition of tobacco are so complex that the question arises as to which constituent is due the toxic effect. This seems to be unknown. The *Lancet* quotes some investigators who to their undying fame deny that any nicotine is found in tobacco smoke at all. Unfortunately, the aromatic compounds are believed by these authorities to be more toxic than the oils, bases, gases and anines.

Carbon monoxid has been found in the gases of tobacco smoke; let us hope only in cigarette smoke. Where stupor, trembling of limbs and hands, dizziness and nausea occur following the use of tobacco, it may be due to the susceptiblity of the organism to this gas. But as it is generally very scarce in tobacco smoke and as its effects are similar to nicotine, it is a hard problem to settle definitely.

The devotion of cigarette smokers to their weed seems far greater than that of other tobacco devotees. In fact, so far has this been noticed, that cigarette makers have been accused of putting opium in their wares. A prominent official active for years in catching criminals stated to the writer the other day that in his experience practically all habitual criminals and degenerates were excessive cigarette smokers. Whether they smoked to excess because they were criminals or whether they became criminals because they smoked to excess is a problem, but this official believed that the smoking had a very definite influence for bad.

Despite this fact, men and now even the ladies are smoking daily. When done in moderation, especially in older people, it is hard to say what damage is accomplished. Fifty years from now it will still be a pleasant problem for the writers of the day to attack with no more promise of settling the question or influencing its spread than we have now.

ARE THE INSANE CRUELLY TREATED?

FROM time to time this question arises with regard to attendants in insane asylums; and those who make such accusations back them up with what they hold to be competent and conclusive testimony. There is now an investigation of this sort by a committee appointed by the Speaker of the House of Representatives concerning the conduct of the Government Hospital for the Insane. It is alleged that flogging, kicking, cuffing and throttling are among the very least of the outrages disgracing this institution. Patients, it is declared, have been committed without due notice or previous examination. They have, it is alleged, frequently been choked to insensibility; their ribs have been broken; they have been tortured with caustics; they "have been stimulated to violence by means of drugs and then beaten to submission." The attendants, indeed, have been characterized as monsters of cruelty, as devils, rather than human beings.

It is manifestly important that such charges as these should be sifted to their logical conclusion—for the sake of the attendants, at least, as much as for that of their alleged victims. This will, no doubt, be done, gravely, as befits the seriousness of the accusations. We would here but submit some elementary observations, coupled with a few facts of a medical nature.

Those who charge these dreadful things appear to us to be trying to prove too much, which course is always a mistake and a weakening of one's case, as any lawyer will attest. The question will at once arise, which Cato of old asked concerning the extent to which the defendant could profit by the machinations of which he was accused—*cui bono,* what profit would it be to the attendants to commit such atrocities? True, we may believe without proof that attendants, being but human, are from time to time negligent of their patients, or even stringent with them; it is absolutely necessary in many cases that force be used.

The *Sun* wisely cautions its readers concerning the value of some of the testimony set before this committee; we would go further and declare that no testimony given by an insane patient should be accepted, unless corroborated by those who are not patients. Why, for instance, should an attendant give "men medicines which make them violent and passionate" when such a course would certainly increase his own responsibilities and anxieties? Again, a woman testifies that her husband has had a black eye seven times, "although he is bedridden." Let us assume that her testimony was true. Her husband, however, was a paretic, and it is quite conceivable that his injuries were self-inflicted. Broken ribs and minor injuries were testified to; but physicians know that the skeleton in general paralysis of the insane is very apt to degenerate and the bones to become brittle and to fracture from very little traumatism indeed. Anæsthesia is, moreover, marked in this disease, so that hurts received in unusual ways, and not at the hands of attendants, will oftentimes remain unfelt by the patient until they are accidentally revealed.

It is not easy to control maniacal patients. We observe with all decorum that an insane asylum is not a polite salon, nor does a psychiatric clinic resemble in any way a pink tea. It is very well to talk about treating the insane tenderly, but when a maniac, as sometimes happens, can handle a couple of attendants after the manner of Indian clubs it requires a certain force to subdue him—mere tact will not suffice—and besides, he is very apt to hurt himself as well as others. It requires extraordinary patience to deal with the insanse. We commend as very just and fair this opinion of the *Sun,* as also its advice that, "in consideration of its character, the alarming testimony published in the papers should be received with a certain caution and without an inclination to draw hasty conclusions."

SHOCK AS A CURATIVE AGENT.

TUKE has written an invaluable book on "The Influence of the Mind Upon the Body." It is not "up to date;" nevertheless it is full of scientific data, apt illustrations, pregnant observations and wise deductions. He relates a case: The sufferer was "seized with all the symptoms of a violent attack of rheumatic fever." His dread of a two or three months' sojourn in a Manchester hotel bed was so great that he started for London, well wrapped up, on theMidland fast train. From the time of leaving his heart was going at express speed, there was a profuse sweat, the pain was acute. Suddenly there was a dreadful collision. "From side to side of the carriage I went like a billiard ball under a hard cushion hit. The compartment was soon seen to be sprinkled with the blood of a hapless victim whose face had come into crushing contact with it." This railway collision instantly cured the patient of his rheumatism. It is related that General Grant suffered severely from rheumatism at Appamattox. Never-

theless when a flag of truce brought him the news that Lee was ready to surrender his joy was so great that his rheumatism was instantly dissipated. A colleague had a bedridden patient whom he was convinced could leave her bed and was much better about. He went one day to her bedside and sternly told her: "Mrs. X, you are to leave your bed at once and come to me in the other room." This she did and presently came before him. Afterward when asked how she could get up when she seemed so ill, she said it was because the doctor looked and spoke in such a way that she felt he would thrash her if she did not obey. Had a Christian Scientist done this a miracle would have been proclaimed. *Verbum sapiendi sufficiat.*

The dreadful earthquake and fire at San Francisco has produced a number of cases similar to these. A paralytic who had been crippled for fifteen years is now entirely cured. There was a young girl whose vocal cords would not work after the earthquake, but who recovered her voice when overcome by emotion at the sight of her mother. In other lands similar seismic commotions have produced like effects. During the Russo-Japanese war a party of foreigners gave a dinner in a Japanese city. There was inebriety at this feast; so that some of the diners had on what is vulgarly termed a "skate." The dinner was ended by an earthquake, the effect of which was to reduce every person present from the gaiety produced by good wines to his normal soberness. It is astutely observed in this connection that the experiment of confining dipsomaniacs in territories subject to shocks might be worth trying.

There is no mystery about such cures as these. Such conditions as are structural, as a mammary cancer or a pulmonary cavity are not to be cured upon the instant by these means. But functional and imaginary disorders are amenable to healthful stimuli by way of the emotions.

RODENTS AND DISEASE.

NO ONE of normal tendencies ever was fond of rats and mice. Our repugnance, especially that of our women folk, to these creatures has seemed somewhat absurd. However, there is scientific evidence that this repugnance is well-founded; that it probably has its origin in an instinct of self-protection against disease-engendering factors.

Rats certainly do transmit trichinosis by way of the pork which we eat—to what extent it is hard to judge. Many accusations against the meat trust in Chicago may be unjust. However, there is no doubt at all that in the stock yards hogs have been seen to catch and eat rats; and that, on the other hand, rats have and do devour tainted, diseased flesh of the hog. We turn from this ghastly matter to the transmission by rats of the plague, typhoid and typhus; they bring forth and disseminate from their sunless and foul hiding-places the germs of these fatal diseases. And no doubt many a sufferer has contracted his disease in this manner. Concerning such transmission of plague there is now no manner of question; this scientific fact is established beyond peradventure. In addition we learn that Remlinger, of the Pasteur Institute at Constantinople, has found rats and mice to be extremely susceptible to the poison of hydrophobia; undoubtedly these rodents are responsible for many cases of rabies in dogs. Remlinger believes, indeed, that canine rabies would have worn itself out and would have become far less severe were its virulence not constantly reinforced by the bites of rats and mice.

CLEMENCEAU—PHYSICIAN AND STATESMAN.

THE scope of the medical profession is as wide as humanity. The physician cannot but be interested in every phase of human life. To this end his education, his scientific attainments and the humane instincts which have inspired his career inevitably lead him. It is, therefore, no occasion for surprise that medical men are from time to time active in fields other than that of the healing art; the wonder is, indeed, that physicians are so seldom seen in any other work than that of medicine. Dr. Georges Clemenceau has made for himself a most distinguished position as a French statesman, and the manner in which he has met and put down the recent socialistic labor demonstration in France has won for him the gratitude of that nation. His career is particularly of interest to us by reason of his having at one time practiced medicine in this community. It is likely that, had the Franco-Prussian war never occurred or been postponed a year or two, he might have become a great American legislator, or, at any rate, an illustrious American physician.

Now in his sixty-sixth year, Dr. Clemenceau comes of an old Vendean Huguenot family. He writes brilliantly and with an originality and perspicacity which is the delight of those who appreciate good literature. He studied medicine with distinction at the Nantes and Paris hospitals, and was interne in each. At the age of twenty-two he wrote a work, which is still valuable, on "Anatomic Conceptions and General Physiology." In the later sixties he was a formidable opponent to the empire of Louis Napoleon, the penalty for this was that he was "invited to leave the country." In 1868 he reached New York, his only possession being a very fine collection of surgical instruments. He became at once a practicing physician, and he laid the foundations of a substantial practice in the French colony, south of Washington Square. He also regis-

tered his intention to become an American citizen. The Franco-Prussian war and the empire's fall determined him to return to France. Lacking the money to this end, he would have borrowed some on his surgical instruments had not a friend—himself a great physician—freely offered the money without security. He made his début in the Chambers in 1876, since which time he has been a masterful and wholesome force in French politics. In the intervals between law-making, states the *New York Times*, "he has written much—short stories, sketches of travel, essays, novels. Among the last may be mentioned 'Les Plus Forts,' a study of present-day manners, aims and conditions of life, which only a man with the most varied culture and with a broad knowledge of and a sympathy for the world could have written." This great man is surely a precious possession, which our profession may claim.

EVOLUTION THE MASTER KEY.

IT was Herbert Spencer who made the theory of evolution advanced by Darwin the basis of a synthetic philosophy, by which he sought to explain and to correlate universal facts and conditions. Spencer's work, in several weighty tomes, has proved rather too formidable for most readers. And, since the publication of his First Principles and its accompanying valumes, several authors have essayed to condense and simplify his writings. John Fiske did this most admirably; and, like the genius that he was, he infused into his Outlines of Cosmic Philosophy, a two-volume work, a large measure of his own original thought. Another valuable condensation is Professor Hudson's "Philosophy of Herbert Spencer." We here review the excellent and most readable single volume by Dr. Caleb W. Saleeby entitled as above.*

Dr. Saleeby's work is certainly most succinct, clear, concise and comprehensible; extraordinarily so, considering the range of subjects with which he deals—subjects with which the physician should be familiar. The origin of life, heredity, the evolution of mind, the test of truth, the evolution of medicine, radium and the atom—these are titles taken at random from the table of contents.

The dictum that "nothing is constant but change," Saleeby declares, does not apply to the reality which is the quest of all philosophy and the truth which expresses it; "these alone are immutable." Otherwise, however, all things change. The philosophy of evolution teaches that all phenomena change in accordance with certain laws, and it attempts to give these laws expression. Evolution, or change, is universal; stars and souls, atoms and oak-trees, states and religions are alike subject to it. With the exception of the law of the conservation of energy, upon which Spencer built it, "this statement of absolutely universal evolution is surely the greatest of all generalizations." Dr. Saleeby makes an important distinction—he would not confound the term change, or evolution, with development. "Evolution, as we know it, though it may appear in our own time to be working toward 'some far-off divine event,' yet appears to have such only as a proximate and temporary goal. The great rhythm of the universe may show such a crest; but, as far as we can see, the wave must travel on, and the upward movement be followed by a downward in this endless cycle which the synthetic philosophy, like so many of its ancient Oriental predecessors, reveals to us." Here is a hard saying for many of us, our natures striving always as they do toward better things and loftier ideals. Still, if the evolutionary philosophy, or any other, be true we must accept it, however unpalatable it may be. Truth is the final criterion, and she must be followed wherever she leads.

Nowadays, indeed, we have come to "think in evolution." Dr. Saleeby finds in it the key to the problems of all phenomena; it is necessary alike to the chemist, the politician and the theologian. For the old static view of things, which regarded them as at rest, evolution substitutes the dynamic view, which regards all phenomena as in motion. "On one central eminence (Dr. Saleeby quotes Sir William Huggins) dominating alike the past, the present and the future, Science has for some years firmly entrenched herself—the position that through all the ages the Cosmos has advanced, and is still advancing, by a process of orderly evolution."

*Harper's.

Postoperative nausea is not so prevalent since the introduction of nitrous oxide gas as a preliminary in anæsthesia; still it occurs frequently enough to be entitled to consideration. L. E. Holmes finds (*Am. Med.*, Dec. 23, '05) that of the predisposing causes sex is most conspicuous, the female sex being the more prone. In nervous patients, the reflex after-effects are likely to be more severe and prolonged. The operations most likely to be followed by nausea and vomiting are those on the uterus and adnexa, especially when dilatation is done. Holmes differs from the general opinion in that he does not find ether to be followed by nausea more frequently and severely than chloroform. The preparation of the patient has much to do with the after-effects, and more important still is the after-treatment. It is a safe rule, though unnecessarily hard in some cases, to keep everything out of the stomach for at least twelve hours. Even a very shall amount of water will set up nausea and vomiting, from which up to that moment the patient has been wholly free. Holmes thinks that the degree of gastric disturbance following an etherization has no relation whatever to the quantity of ether used.

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This little volume gives the essential information respecting the diseases of which it treats, in an excellent manner, for the use of the student and the general practitioner. The methods of treatment are confined to those which the author has found personally successful. The text is very concise and clearly stated.

The Dynamics of Living Matter.—By Jacques Loeb, Professor of Physiology in the University of California. New York: The Columbia University Press; the Macmillan Company, Agents. Octavo, pp. 233. Price, $3.

This book owes its origin to a series of eight lectures delivered at Columbia University in 1902. The aim of these lectures was to give a presentation of the author's researches on the dynamics of living matter and the views to which they had led him. In preparing this volume, the author has tried to give a somewhat more complete survey of the field of experimental biology than was possible in the lectures, without, however, trying to alter their character. The author's well-known experiments in fertilizing the eggs of the sea urchin with hypertonic sea water are given here in full, and cannot fail to interest the student of biological science. The lecture on Heredity is full of startling information which should be instructive to members of our profession.

International Clinics.—A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia. Vol. I., sixteenth series, 1906. Philadelphia and London: J. B. Lippincott Company, 1906. Pp. 309, octavo. Price, $2. Illustrated.

In this thoroughly up-to-date publication we find under "Treatment" there are papers on "Exophthalmic goiter, gastroptosis, coughing and its relation to treatment, dechloridation treatment in diseases of the heart, and indications for and the method of performing venesection." There are also essays on "The diagnosis and treatment of membranous tonsilitis, the position and rise of the heart in advanced mitral stenosis, the origin and preventive treatment of oxalic acid deposits in the urine, and death and blindness as a result of poisoning by methyl or wood alcohol and its various preparations." The causation and treatment of eclampsia with special reference to the methods of accomplishing rapid delivery of the fetus is practically and interestingly set forth. The progress of medicine for the past year is thoroughly digested.

A Compend of Obstetrics, Especially Adapted to the Use of Medical Students and Physicians.—By H. G. Landis, A.M., M.D., late Professor of Obstetrics and Diseases of Women in Starling Medical College. Revised and edited by William H. Wells, M.D., Demonstrator of Clinical Obstetrics in the Jefferson Medical College, Philadelphia, etc. Eighth edition, illustrated. Philadelphia: P. Blakiston's Son & Co., 1906. 12mo., pp. 227.

In the eighth revision of this excellent little book, the editor has brought his subject fully to date. We cannot commend this work too highly. No student should be without it.

Ellis's Demonstrations of Anatomy.—Being a Guide to the Knowledge of the Human Body by Dissection. Twelfth edition. Revised and edited by Christopher Addison, M.D., B.S. (London), F.R.C.S., Lecturer on Anatomy, Charing Cross Hospital, Medical School; formerly Hunterian Professor, Royal College of Surgeons, England; Examiner in Anatomy, Royal College of Surgeons, England, etc. Illustrated by 306 engravings on wood, of which a large number are in colors. Octavo, 861 pp. Price, muslin binding, $3.50, net. New York: William Wood & Company.

In preparing this edition of Ellis's "Demonstrations of Anatomy," the editor has carefully preserved those features for which the book has been so justly valued in the past, and the general style and character has not been interfered with, although the advances in the knowledge of anatomy and in the methods of its teaching have necessitated many changes. The matter has been rearranged and now follows the ordinary course of dissection as taken by students, beginning with the simple anatomy of the upper and lower limbs and ending with the more complex parts of the head and neck and the organs contained therein. The illustrations have been largely increased and many are in colors and are unsurpassed in accuracy and beauty of execution. A special feature has been made of the muscle attachments to the bones. A system of marginal indices facilitates ready reference, and a comprehensive index to the entire volume completes one of the most important additions to anatomical literature of recent years. The publishers, bearing in mind the burden imposed upon beginning medical students in the number and cost of textbooks to be purchased, have generously issued this book at a very low price, believing that the large sales will offset the small margin of profit to them.

Pyloroplasty Versus Gastro-Enterostomy.—We have recently mentioned—and, we confess, with some prejudice—the matters of gastro-enterostomy. In a recent issue of the *Journal of Surgery, Gynecology and Obstetrics,* Finney gives a very favorable report on pyloroplasty, which may be considered a rival operation. Thirty-three cases of non-malignant stenosis of the pylorus were operated upon with three deaths, not due to the operation itself. Whereas Mayo has recently had regurgitation of bile after pyloroplasty, Finney has had no such experience. However, regurgitation of bile is so common through a normal pylorous and the bile is so often retained without causing vomiting that, on the one hand, we may reasonably question the literal truth of Finney's claim and. on the other hand, point out that an occasional vomiting of bile neither reflects on the surgeon nor on the mechanic advantage of pyloroplasty. Finney emphasizes the point that the operation is not contraindicated by dense cicatrical adhesions but that these cases are better treated by pyloroplasty than by gastro-enterostomy.

CORRESPONDENCE

ON THE ETHICS OF PROPRIETARY PREPARATIONS.

To the Editor of THE MEDICAL TIMES:

There has recently been a renewed discussion of the ethics of proprietary mediciments. Such preparations may be divided into the following classes: 1. Out-and-out quack medicines, with which the medical profession has no concern. (2) Mysterious combinations, advertised to the profession, but of whose nature and ingredients no exact information is given. (3) Preparations of various sorts, good, bad and indifferent, advertised to the profession and containing an exact statement, at least of the active ingredients. (4) Preparations of the 2d and 3d classes in which the information is deliberately, or through ignorance, false. (5) Preparations of the last three classes also advertised to the laity.

The first class requires no discussion at present. The second class is to be universally condemned, unless possibly an exception is to be made in favor of serums, etc., still in an experimental stage, placed on the market by men of repute, at the solicitation of the profession and with general statements as to the nature of the preparation. Manufacturers of this class of goods—some of them ranking among our leading wholesale pharmacists—commonly plead that if they advertised the exact composition, they would be subjected to unfair competition by imitators. This plea is, to some degree, correct, but it is absurd to suppose that intelligent physicians will sacrifice their duty of personal supervision of the details of treatment of a case and allow themselves to be made cats' paws by druggists. Moreover, the financial success of preparations of malt and cod liver oil, hypophosphites, etc., and even of compounds of puerile simplicity demonstrates that ordinary business methods can obviate the personal disadvantages to any one manufacturer, of competition by imitators. Nine times out of ten, the proprietary preparation has no originality but is itself an imitation or copy of some standard prescription. The only kind of physicians that use this class of drugs at all are themselves, ipso facto, inferior in ability in prescribing to druggists and it is a wholesome sign of the times that the demand for this class of proprietaries is falling off.

The third class of proprietaries can safely be left to the discretion of the profession. So far as liquid medicines are concerned, there are almost none of this class that cannot be prescribed extemporaneously and dispensed by any competent druggist. Pills, bougies, tablets, etc., as well as foods, are either much more elegantly prepared wholesale or are quite beyond the equipment of any ordinary retail pharmacy.

Unless the circumstances are extraordinary, a manufacturer who deliberately or carelessly or ignorantly, misstates the composition of a product deserves not only the condemnation of that product but of every other that he issues. "Falsus in uno, falsus in omnibus." Some leniency should be extended with regard to foods, animal extracts, germ products, serums, etc., as the chemical knowledge of these subjects is not yet thoroughly satisfactory and errors may occur which are, at present, unavoidable. For example, some years ago, the writer made clinical analyses, confirmed by a competent chemist, showing that certain claims as to the existence of proteid in a given proprietary food were incorrect. The firm took the criticism in good part, improved their methods and now put out a preparation which conforms to their claims. So, too, most of the bacterial serums now on the market have failed to realize the hopes expressed. But the various manufacturers are employing competent bacteriologists and physiologists and are conducting elaborate plants both for the preparation and the testing of their products. It is obvious that, if we ever have good results on a practical scale from such preparations, we must rely upon the wholesale manufacturers and must make allowances for the inevitably imperfect scientific knowledge upon which their preparations rest.

Unfortunately, the fifth class of proprietaries, advertised ethically to the profession and also as ordinary quack medicines to the laity, include a number of very excellent and elegantly prepared medicines. One firm is particularly guilty in this matter. It is exceedingly difficult for the conscientious physician to decide what to do in such a dilemma. He dislikes to abet such dishonorable firms and yet he cannot very well decline to prescribe a drug that he feels he needs in a given case nor prescribe it in the very crude form within the power of the retail druggist. Ultimately the problem will undoubtedly be solved by the competition of wholesalers not addicted to double dealing.

Finally, there is a point in ethics, from the side of the manufacturer, which we have not seen mentioned in the literature of the subject. When a reputable firm places before the profession a really valuable new article, either as the result of costly experiment or simply as a matter of ordinary business enterprise, and it is imitated without improvement by other firms, it seems to us plain that the profit should accrue to the original producer and that other competing firms should be frankly told that the benefits of trade do not belong to them.

A. L. BENEDICT, M.D.

Buffalo, April, 1906.

Myxœdema in the Male.—An interesting case is reported by Finley (*Montreal Med. Jour.*). The patient was admitted to the hospital in November, 1904, complaining of diarrhœa, headaches, weakness in the arms and legs, shortness of breath and swelling about the eyes. In 1900 he first noticed swelling of the eyelids; two years later his hands and legs became weak—a symptom aggravated by cold weather. Diarrhœa had been present for nine months before admission. The skin was very harsh and dry, but elastic; the subcutaneous tissues were not thickened. The facial skin had a brownish tinge; the fingers were thick and the hands broad. The pulse was always below 60. The thyroid was not palpable. The patient was quiet, spoke very little and slept a great part of the day. He was given 2 gr. t. i. d. of thyroid extract, increasing up to 5 gr. t. i. d. His symptoms improved; the œdema decreased; the skin became soft and moist; he slept less; the last symptom to disappear was his sensitiveness to cold. Practically no change in weight occurred. A year after he was perfectly well, able to work and was still taking thyroids.

RETROSPECTIVE THERAPEUTICS

THE SWING OF THE PENDULUM—GONORRHŒA.

One of the most curious phenomena in human life is the extremes to which popular opinion will swing in regard to pretty nearly every custom and expression of political belief. Any physician watching medical literature for a few years will notice the same phenomenon, but, in this instance, it is less easily accounted for. The people generally are inevitably swayed by conflicting emotions and cannot be expected to exercise the same conservative judgment as a mature and specially educated profession. Then, too, a popular inconsistency in regard to a tax levy, an election of officers, etc., may really express a perfectly sane and reasonably good judgment. A new political device or a new candidate appears, on the best possible preliminary examination, to be good; actual trial proves that a mistake has been made and the people seek to rectify it.

A new drug, a new scientific force applicable to medicine ought to be received in a liberal and even optimistic spirit. Disappointment may be expected in the majority of cases, but there is still the same practical wisdom in trying the new, with due caution and in a non-committal spirit.

It is not to any such swinging of the pendulum of medical practice that we allude. Even if physicians are deceived by too glowing advance reports or by early results, they are scarcely to be blamed and certainly not for revising their opinions in the light of accumulated experience.

But, in matters susceptible of statistic proof or disproof, by laboratory or even clinical methods, it does not seem on the face of the matter, that there can be any great change of opinion, unless we contrast the views held at times far removed from each other and foreshorten the gradual development of information.

Twenty years ago, the prevailing opinion popularly, and among the great majority of the medical profession, was that gonorrhœa was a very trivial affection, often compared to a cold in the head. To-day prominent gynecologists hold it as the predominant cause of pelvic trouble, many genito-urinary specialists state that it is scarcely curable unless treated early, ophthalmologists refer to it as an important cause of blindness, sociologists treat of it as a prime cause of sterility and even medical men lecturing to students on moral topics, set it forth as an incurable, often fatal, and always terrible scourge of civilization, more to be dreaded than syphilis.

We have no special objection to any one's exaggerating or even going deliberately beyond the bounds of truth, if he can thereby influence large numbers of young men to lead upright lives and prevent blindness, acute fatal sickness, the distressing and life-shortening lesions of the male urethra, bladder and kidney, and the invalidism of innocent young wives and the limitations of reproduction.

A year or two ago, a medical student, advised by a friend, supposedly another medical student, to instill urine into his eyes for conjunctivitis, exacerbated or induced a gonorrhœal ophthalmia which eventuated in blindness. With this case as a text, the students were assembled for a lecture and thoroughly scared, as to the probability of gonorrhœal infection and its results. The same subject matter and similar articles have since then had wide and general circulation through the medical press and the profession has been placed on record as entertaining a far different conception of gonorrhœa from that taught by the best and most conservative authorities.

It occurs to us that the time has come for some one to try to stop the pendulum before it swings any farther in its present direction, for we have observed that pendulums of thought have the same general tendency as material ones, to swing very nearly as far in the opposite direction. For example, we can remember very easily when the medical view of the consumptive was about the same as of a leper, whereas, at present, many if not the great majority of those treating tuberculosis as a specialty, are trying to induce us to regard the consumptive as a much abused individual, who should have free access to our country, our hotels and watering places, our public conveyances and our homes, although there is not a particle of proof or even the claim of proof against the universally accepted dicta that the tubercle bacillus is the cause of consumption, that the majority of cases of human tuberculosis are due to a special human variety of the bacillus, and that this bacillus is given off, in a virulent state by every patient who has any avenue of discharge from a tuberculous focus.

In opposing the present view as to the extreme gravity of gonorrhœa, it is scarcely necessary to state that we are in most hearty concord with the effort to induce young men—and old ones—to lead proper lives. We are not, however, so enthusiastic about securing this result simply by emphasizing the danger of consequences. In a purely ethical sense we have always questioned the genuineness of conversions or the maintenance of outwardly Christian lives, due largely to the fear of hell. So, too, we doubt whether the young man who is warned as to prostitutes and loose women on the ground of venereal disease, is approached in the right spirit. Men who ought to know are nearly unanimous that such disease is not very common among prostitutes of what are termed the better class. It is impossible to make an accurate prophecy, but is it not worth while to inquire seriously whether purity talks, in which facts are grossly exaggerated and in which too much stress is laid on the venereal consequences of sexual immorality, will ultimately defeat their own object?

In the first place, young men in the aggregate are far from being fools, and it occurs to us that a talk based on the unfortunate experience of a medical student who used urine as an eyewash, and urine during an attack of gonorrhœa at that, would be more apt to emphasize the relative safety of a man who had some vestiges of decency and common sense than to point the moral intended. Such a case is too much like the classic one of the medical student who was injured by a cartwheel—the affected person had no business to study medicine.

Secondly, a warning against the dangers of venereal disease is like a warning against intemperate eating and drinking based on the liability to bacterial infection or intoxication or gross poisoning, instead of directing the attention to the main point at issue, it simply points out the need of caution. All purity talks warn against the danger of "private snaps," in order, we suppose, to show that caution is vain, but

the common statement that "private snaps" are more likely to produce infection than prostitutes, is true, only if we mean by them girls of the lower order, who are a little less businesslike and a little less cold-blooded than professional prostitutes. A warning based on the danger of venereal infection does not repress an appetite, does not elevate the moral nature, it simply points the way to ruining virtuous girls, destroying homes and indulging in filthy perverted methods, or to the use of artificial preventives which are certainly effective so far as strictly local venereal infection is concerned, or else it tends to suggest premature marriage with base ideals.

Finally, any exaggeration of facts always tends, ultimately to defeat its own object. However great the deterrent effect of a purity talk in which gonorrhœa is represented as an almost inevitable result of extramarital intercourse, and as being a disease worse than syphilis and plague, the reaction is bound to follow. It is simply a matter of common observation that, with due precautions, sexual intercourse may be indulged in without much danger of venereal infection, that men and women who have had gonorrhœa, have become perfectly well, so far as their own sensations and their power to transmit disease, are concerned. Gonorrhœa is an exceedingly prevalent disease, affecting, at one time or another, probably fifty per cent. of our men. Many authorities place the incidence even as high as 90 per cent., although this is undoubtedly an error. If it were the terribly incurable, transmissible and sterilizing disease taught by so many, we should be in a condition of race suicide even if the other fifty down to, say, twenty per cent. of our population were exceedingly prolific, and we should enjoy no such standard of health as at present. These facts are bound to impress themselves on the average young man in course of time, and to the discredit not only of the personal purity speaker but of personal purity as an ideal.

From the purely scientific standpoint without reference to moral and sociologic features, the following statements seem justifiable. It would be desirable to put them in the form of statistics, but it is extremely difficult to collate such statistics, except for series which are not representative.

1. Gonorrhœa in the male is in the acute stage mainly a local disease, limited to the urethra, also involving the glans and prepuce and often the bladder. Sterility, prostatic disease and ascending infection of the urinary tract are fairly common results of extension. Fatal ascending infection is neither common nor phenomenally rare. A properly and promptly treated gonorrhœa is not very likely to leave behind strictures or mechanic lesions that cannot themselves be radically cured. Thus prostatism, catheter-life and senile bladder and pyelitic lesions even when ascribed to gonorrhœa are really the result of inadequate treatment.

2. Gonorrhœa in the female is very apt to involve the peritoneum though generally only of the pelvis. Gynæcologists estimate the relative frequency of gonorrhœal lesions anywhere from 10 to 90 per cent. of all pelvic lesions. After radical operation, very good general health is usually attained, unless operation has been unduly deferred. Pus ascribed on clinical evidence to the gonococcus is prone to become sterile, if long retained. Many cases recover symptomatically without operative interference. Urinary lesions are, on the whole, of less importance than in the male, genital lesions the reverse, owing to anatomic differences.

The great discrepancy as to statistics may be explained partly by differences of clientele of different gynæcologists. The personal equation is also a factor. For instance, we recall a case of pelvic operation in a young woman, ascribed to gonorrhœa without bacteriologic evidence or history of an acute clinical attack but simply because the girl was a waitress. There was nothing specifically diagnostic in the lesion found. With all allowance for an excusable cynicism, it is obvious that such a mental attitude as this would tend to exaggerate the reported incidence of pelvic gonorrhœa.

3. Gonorrhœa, conjunctivitis and ophthalmia is charged with a considerable proportion of blindness. While statistics are easily available, they are not entirely reliable nor are they so important as may seem, for suitable treatment has been proved to be almost an absolute preventive of ophthalmia neonatorum. It is also plain that the gonococcus is not so virulent for the eye as it is often considered, for, otherwise, accidental autoinfection would be extremely common, instead of quite rare. At any rate, this complication, although terrible in its result, is neither particularly common nor at all inevitable if ordinary precautions are taken.

4. Like the pneumococcus, typhoid bacillus and many other germs, the gonococcus may invade the serous and synovial membranes and may even produce a true pyæmia. Gonorrhœal arthritis is the commonest of these general, metastatic complications, and while a serious condition, is not often fatal nor necessarily incurable. It is impossible to state what proportion of cardiac lesions are due to gonorrhœa, or indeed to any other infection, largely because of the preconceived idea of rheumatism as an etiologic factor. So far as can be determined from clinical reports, it seems that non-pulmonary pneumonia is considerably more frequent than non-genital gonorrhœa, referring in each instance to metastasis and not to local extension. We have noted, in the last year, only one report of gonorrhœal pyæmia, a most exceptional fatal case, preceded with blindness. (See *Am. Jour. Med. Sci.*)

5. Sterility is certainly due in considerable degree to gonorrhœa, of the male or female or both. When, in the case of married women, no precautions have been taken to prevent conception, pregnancy often, perhaps usually occurs, but the gonorrhœal infection often prevents further reproduction, at least for a considerable period. The New York committee of fifteen have stated the opinion that 50 per cent. of sterility is due to gonorrhœa. L. H. Dunning, however, found sterility in only about 50 or 548 married women and only 8 or 9 of these revealed the presence of the gonococcus. Ten or 11 had used preventatives and various other conditions preventing pregnancy were found, so that nearly half of his sterile cases could be shown to owe their sterility to some definite condition other than gonorrhœa. It is obvious that it is no easy task to assign the cause of sterility nor to settle definitely which of the two per-

sons concerned is at fault. Too hasty conclusions are sometimes drawn from a single finding of a dead spermatozoa. Certainly, every general practitioner can cite numerous cases of male gonorrhœa followed by fruitful marriage. On the other hand, it must be admitted that male gonorrhœa is, in a considerable number of cases followed by more or less persistent sterility, that the disease is frequently communicated to innocent wives and that any serious and extensive pelvic gonorrhœa in the female is directly or as the result of necessary mutilation, followed by permanent sterility in the majority of cases. A very favorable corrolary to these observations is that the immoral stratum of society tends toward extinction, although, unfortunately, those who are only accidentally immoral or who are merely the victims of immorality, are also involved. Still, on the whole, the tendency is greatest for those most thoroughly steeped in immorality.

While the argumentum ad hominem is not altogether scientific, it is certainly allowable in deciding matters of relative desirability and undesirability. In spite of all that has been said and written as to the destructive nature of gonorrhœa and, especially as to its being a worse disease than syphilis, we are inclined to believe that, if the matter were presented to the medical profession individually, almost every one would choose gonorrhœa to syphilis. Omitting all qualifications as to morality, we are also inclined to believe that most physicians would choose gonorrhœa to tuberculosis, ecchinococcus disease, variola, and perhaps even pneumonia, diphtheria, typhoid, etc.

This does not, by any means, place gonorrhœa in its old category with a severe coryza, nor is it tantamount to saying that even the newer silver preparations have made it an easily curable disease, nor does it overlook the serious and even fatal tendencies of a neglected or especially virulent infection. Certainly, it does not remove the necessity of a vigorous campaign against immorality.

The Instruction of the Young in Sexual Matters.—In considering this topic, a very important item is the age at which sexual instruction is to be imparted to the child, if it is to be given at all by responsible adults having a moral obligation to the child, as parents, teachers, family physicians, religious instructors, etc. There can be little or no objection to the dictum that sexual knowledge in advance of sexual development, is unnecessary and undesirable. In other words, until puberty, the ideal child should be kept in a state of innocence.

Under certain conditions of secluded life, innocence can, of course, be maintained until the child's attention is drawn to the physiology of sex by spontaneously appearing manifestations in his or her own body and sensations, that are conspicuous and that will lead to self questioning if not direct appeal to others for information. Novelists have been rather fond of dealing with the problem of girls or boys kept in a state of primitive ignorance until maturity and, in women especially, while absolute ignorance of reproductive phenomena rarely is retained until late, a degree of ignorance about sexual matters which is sometimes amusing and sometimes sad in its consequences, is by no means rare. For instance, a few years ago, the writer was consulted by a woman of 25 who actually thought that she might have been impregnated by a caress, certainly highly improper, but purely manual. Venereal disease of innocent wives and children is, as is well known, largely dependent upon failure to instruct girls in such matters.

Whether, under ordinary conditions of life, children can be kept innocent until the age of puberty, is very doubtful. The writer's personal experience, both in the city and during vacations in the country, was that boys ceased to be innocent at about the age of five, and that by the age of eight they were able to recognize pregnancy, menstruation, and eroticism in their elders and that, in general, they had about as good a knowledge of sexual anatomy, physiology and pathology, as the average layman ever attains. Of course, any such statement must be qualified by the admission that an immature mind never has the full appreciation of facts that a mature one has.

Whether the writer and his associates were exceptionally precocious it is impossible to say. Certainly, they had no realization that they were further advanced than other boys and their sources of information were merely tradition, quack advertisements, books accessible only to a favored few and then surreptitiously and, as an authority of final resort, the "boy who works in the drug store."

Whether or not it is possible for a boy to remain innocent of sexual lore after he begins to play with other boys without constant supervision by adults, is very questionable. At any rate, any quick-witted adult who has not forgotten his own youth and who is still admitted to the outer circle of the aristocracy of childhood, can very readily tell when the time is ripe to revise the teaching of the patent medicine dodger, and the boy who works in the drug store. Unfortunately, so many grown persons seem to have no memory extending further back than their adolescences. In talking with children, they try to define every third word they use, they drop the first and second personal pronouns and speak in the third person, and they assume an idiotic air of dignity and condescension to which the child responds with a frigid assumption of ignorance and imbecility. Afterward, the child tells his companions what the grown-up said and how he said it and the consensus of opinion would wither the grown-up's dignity and condescension if it could get to him through the double ring that he has drawn around himself and caused the child to draw around himself. It is perhaps fortunate that adults of this stamp do not usually realize when the period of innocence ends and that of concupiscence begins, for they could not possibly get to the child on his own level and have any influence over him. Fortunately, in almost every "gang" of boys, there is some one who has a father or uncle or friend who is at once clean-minded and enough of a boy to be welcome among the boys and, from this influence, boys usually learn to avoid masturbation and are steered clear of sexual dangers until, at least, they have reached adolescence, when the problem becomes simpler. But there are exceptions enough to make one shudder and, every once in a while, some little boy falls in with a crowd of coarse youths who teach him all sorts of viciousness. And sometimes he learns his lessons in vice from a nursemaid, a teacher, an aunt, or some false female friend of the family.

We imagine that the conditions among little girls of five to eleven are somewhat similar, but that in-

nocence is usually longer maintained, while, per contra, when they fall under bad influences, the conditions are worse than among boys.

After the age of puberty, the conditions change very materially. There need no longer be any hesitancy at instructing the youth in sexual matters. Innocence is a thing of the past or ought to be, if it is not. In place of childish curiosity that may lead to self-abuse, precocious intercourse and an impersonal interest in improprieties, we have to deal with the awakening of genuine sexual instincts, which may lead to true habits of masturbation and other forms of sexual perversion, to venereal disease and to pregnancy of female companions. Of course, it is impossible to draw any hard and fast line between the two aspects of the problem, yet, generally speaking, puberty occurs rather abruptly and the possible dangers are, in the main, different, on the two sides of its broad line.

The writer is firmly convinced that, as in most other moral problems, salvation must be worked out individual by individual. Published treatises and lectures, no matter how carefully applied, cannot be made to fit all cases, nor can any one adult get into touch with all members of a large group. If tracts are distributed, they are pretty sure to reach the hands of children too young to have them, and both tracts and lectures are apt to be misconstrued and perverted. If every parent, every teacher, every family doctor, every minister, would feel it his duty to see that every youth with whom he comes in contact is properly instructed, few would be omitted. Sometimes the task can be better done by one of these men, sometimes by another. Tact and intuition must decide this point. So, too, they must decide the manner in which the information is imparted. It is worse than useless to put the matter on a religious plane in talking to a boy who is not of a religious nature. If the adult is himself a rounder, however sincere his desire to preserve some one else's youthful purity, he had better drop all pretense of morality and speak as an experienced man of the world to a younger and less experienced one, or else get somebody else to do it.

All things considered, we are inclined to believe—although the opinion is far from ideal—that the best aggregate results are acomplished by those men who make no pretense to high morality, who do not attempt to scare the youth by exaggerated accounts of possible consequences of yielding to temptation, but who state uncolored facts and who inculcate, not the ideal religious or moral standard, but the working standards of decent living as viewed by men of the world. The boy will soon learn, if he does not already know, that the average man of good standing in the community is not a virgin, that pregnancy is not an inevitable result of intercourse, that venereal diseases are often escaped and usually cured or, at least, alleviated to such a degree that the laity considers them cured, and that most men tell bad stories. According to the religious and moral standards, there is no perspective to vice. It is the religious men who tell rotten, pointless stories at banquets, and who, if they go wrong at all, seduce innocent virgins and abuse positions of responsibility to secure victims of their sensuality. Of course, at the opposite extreme, they meet men utterly devoid of decency and honor. A good many centuries of experience have pointed out about what can be expected of men in these regards. Frequently we encounter youths who can be appealed to, on the highest religious and moral plane. More often we know, if we are honest with ourselves, that the youth with whom we come into touch is bound to be more or less lewd and to depart from the path of virtue. If we attempt the impossible, we simply drive him away from what influence and protection we can afford him. We can, at least, teach him to follow Lincoln's example in making his stories pointed and in causing some flower of wisdom or morality to grow out of the mire, rather than to indulge in a literal coprolallia. We can teach him the unmanliness of perverted sexual practice. We can probably secure for himself as well as for his future wife and children, freedom from venereal disease and the neurotic results of sexual excess. We can induce him to draw a sharp line between what is merely wrong and what is low-lived and dishonorable in his relations with the opposite sex. Simply as a matter of selfish hygiene and expedience, we can often induce him to postpone his tour of investigation into a forbidden territory, so long that he will fall under the influence of a genuine love for some one pure woman and lose his inclination to depart from the path of rectitude.

Testevin's Reaction in Children's Diseases.—Dickinson examines in *The British Journal of Children's Diseases* the work of Modena in the Clinic at Pavia with relation to this reaction, which is described as follows: One part of ether is poured into a test tube containing two parts of acid, fresh urine from which the coagulable albumen has been removed by acetic acid, boiling and filtration; the mixture is then well shaken and left to stand. If there are albuminoid substances in the specimen a kind of fat emulsion will appear on the sides of the tube, which soon solidifies and forms on the top of the urine a kind of plug-like collodion, which is often of consistence sufficient to permit of the tube being reversed without escape of the fluid. The consistence diminishes if the tube is left uncovered or placed in the heat, while under opposite conditions it may last for weeks. The reaction may fail if the urine is alkalinized. The coagulum is formed in albuminous urine, but is less marked than after the elimination of serum and globulin. The principal diseases in which this coagulum is noticed are: syphilis at any period, diphtheria, typhoid, malaria, tuberculosis, meningitis, gastro-intestinal disturbances and nephritis. The coagulum is more voluminous and dense in the acute stage of these diseases and in grave cases; but the phenomenon persists in a lesser degree some time after recovery. To insure a fixed method of clinical research 5 c. c. of urine were used in every case and the height of the coagulum measured; and among the results noticed were that in diphtheria the height was never very marked; it became higher in scarlatina and attained its maximum in measles. Modena finds that Testevin's reaction is a phenomenon which occurs in definite and fixed conditions: probably the body giving rise to it is an albuminoid of the peptone class; the reaction is wanting in healthy subjects, but is almost constant in the sick, in whom it is very variable owing to circumstances as yet not well ascertained—the

greatest increase, however, is in relation with thermic increase; hitherto it has not been possible to attribute any striking diagnostic or prognostic value to this reaction, but it would be interesting to ascertain its place in biological chemistry and the laws which govern it.

Pain Referred and Reflected.—J. Sherren (*Clin. Jour.*) defines the former as the result of stimulation of a nerve in its course, or perhaps to stimulation of a branch, the pain being felt, in the case of the main trunk (as the ulnar nerve) in the area distal to the point stimulated; in the case of the branch (as in a distribution of the trigeminal nerve), it is felt in the whole cutaneous distribution. Reflected pain is localized to the surface of the body, occurring in association with visceral disease, or perhaps with joint disease; for example, the pain felt in the right side of the abdomen in certain cases of appendicitis. Sherren emphasizes referred pain resulting from injury to a peripheral nerve produced by an accident or during the course of an operation. In primary suture of an accidentally inflicted nerve wound, silk should never be used in suturing because of the ease with which this substance becomes infected and of the difficulty of making such wounds aseptic. The treatment is the same in all cases of referred pain and cutaneous hyperalgesia following injury of a nerve in continuity. The injured part of the nerve should be removed by operation; the ends should then be approximated and sutured. Referred pain may result from a surgical operation, and it may also arise from pressure, or from involvement of a nerve in disease. Errors in diagnosis are thus likely.

Tuberculous Pleurisy is a vital subject, considering how frequently pleural lesions either precede or accompany pulmonary tuberculosis. Martin (*Lancet*, March 5, '06) finds the course of primary tuberculous pleurisy to be very varied; an accurate prognosis in the acute stage of the disease is impossible. In diagnosis must be considered: The mode of onset. The course of the disease, including an examination of the pleural fluid obtained by puncture. The pyrexia in tuberculous cases is frequently much more prolonged, even in the absence of empyema; this symptom in the absence of suppuration or other complication is a strong evidence of tuberculosis. The pleural effusion tends to reaccumulate, requiring paracentesis several times for the patient's relief; it sometimes coagulates spontaneously, unless the disease has become chronic. The result of guinea pig inoculation is often positive. Occasionally the development of peritonitis evidences the tuberculous nature of the case. With regard to the after effects of the disease on the chest wall and lung: There is often such an association. In many cases there remain a greatly thickened pleura. The chief physical signs are well marked retraction of the sides, chiefly the base, and deficient expansion. After a time dilated bronchi may be manifested, even with every other evidence of physical well being. The main factor in treatment is to remove the fluid from the chest. Cases running a prolonged course are best treated by lying in the open air, properly wrapped up; there should be generous feeding. By these means a perhaps fatal tuberculosis may be avoided.

The Treatment of Bronchial Asthma is divided by Nelson (*N. Y. Med. Jour.*, Jan. 6, '06) into that during the attack and the management during the intervals. The exciting cause—overloaded stomach, constipation, smoke, dust emanations from animals, or exhalations from plants—should be ascertained and, if possible, removed. No drug is specific; however, atrophine gr. 1-150 alone or with morphine, the latter only in severe cases, hyoscine hydrobromide 1-150 gr., or adrenalin 4 to 8 min. in a 1-1,000 solution hypodermically, may be effective. Inhalations and prepared powders are useful; warm vapor, combined with hot hand and foot bath; turpentine and carbolic acid in hot vapor; the smelling of spirit of ammonia; inhalation of the smoke from dried leaves of hyoscyamus and stramonium each 3 gr.; belladonna, 6 gr., with a minute dose of powdered opium; fumigation with sodium nitrite paper. Hot coffee internally; such mydriatics as belladonna when innervation is disordered or there is spasm of muscles tending to narrow the bronchi; a motor stimulant to restore the rhythmic contractions. Chloral hydrat may be given in large doses, as also sodium nitrite, spirits of Glonoin, or ethyl nitrite, as indicated. The nose is to be carefully examined; as also the kidneys, uterus and stomach. There may be dilitation of the right heart, causing nervous stasis and low pressure pulse; the circulation may have to be equalized by means of ergot or adrenalin. Tonics—iron, quinine, cod liver oil, phosphorous, nux vomica—may have to be given in ascending doses, continuously and without reference to the attacks. Lobelia and ammonium chloride may have to be given for distressing cough; atropine for profuse secretions. Open air, without winds and extremes of temperature, are advisable; humidity is bad. Various climates are indicated; these are a matter of individual experience. The sufferer should wear woolens; metabolism and the functions of the skin and excretory organs should be regulated. Foods which result in fermentation, constipation and chemical irritation—fats and sweets, pork, veal, cheese, malted liquors, heavy wines and champagne—are forbidden. Dinner should be the midday meal; supper should be light; much water is not to be taken at meals.

The open-air treatment of tuberculosis is dwelt upon by Griffin (*Bost. Med. and Surg. Jour.*, Mch. 15, '06), who would have the patient not only in the open air all day, no matter how cold, but would also have the windows open all night. There are many forms of out-door shelter; the essential is that they shall keep out the wet. There must be plenty of covering all over the body, so that it does not feel chilled. Woolens should be worn next the skin. Old-fashioned felt shoes make the best foot covering. There should be a heavy blanket over the mattress; and a blanket may be laid loosely between the sheets so that the body may be rolled in it. Griffin wisely does not "stuff" his patients; health is no more promoted by forced than by moderate feeding. There is no use in overloading the digestive powers; this indeed is detrimental. The giving of eggs has been overdone. Exercise must be carefully regulated. Deep breathing should not be prescribed in rapidly advancing disease, especially where there is pleurisy. Here nature is likely to give us a cue and by pain to limit the respiration. In other cases, however, moderate deep breathing is indicated, for thus better aeration is secured; we cannot get rid of diseased tissue if the blood be poor in oxygen.

The enlarged prostate is one of the most unsatisfactory conditions with which either medicine or surgery has to deal. There are a multiplicity of operations proposed by surgeons, each of whom assures us that his own method is altogether effective. We have, however, learned by experience that we must not hope much with regard to conditions for the relief of which many remedies are forthcoming. Wallace discusses the nature, symptoms and treatment of enlarged prostate (*Practitioner,* Sept., '05): Of the two functions ascribed to this gland—that it is a sphincter of the bladder, and that it is a secondary sexual gland—the latter is in Wallace's opinion the real one. The theories as to the cause of the enlargement are: It is a senile fibrotic change; it is produced by sexual excess; it is due to ungratified sexual desire; it is secondary to vesicular degeneration; it is due to perverted testicular secretion; it is a change normal to advancing years; it is due to a chronic inflammatory process; it is an inflammatory catarrhal process; it is a new adenomatous growth. As to the appearance of enlarged prostates: The changes do not occur before middle life; there are white opaque areas of gland tissue in the normal spongy tissue; these areas often form encepsulated tumors which contain more fibrous than muscular tissue; there are areas of round celled infiltration in the organ; the alveoli contain desquamated epithelium cells, polymorphonuclear leucocytes and amyloid bodies. Wallace believes the enlarged prostate is a new growth. The chief symptom is either frequent micturition or retention. The first of these is characterized by increased tension of the urethra, pressure on the outer side of the intra-vesicular cone, and the forcing of a large lobe against its smaller fellows. The causes of residual urine are not clear. Palliative treatment consists in properly regulated catheterization and rest in bed. Operation in indicated: when the catheter cannot be passed; when it causes pain or hemorrhage; when there is complete retention. One may do castration, vasectomy or prostatectomy. The last of these is usually preferable, except when there is acute retention or exhaustion from sepais. The ultimate results of the operation, declares Wallace, are usually most satisfactory.

Cardiaspasm.—Erdmann reports (*Ann. Surg.*, Feb., '06) the results of operation on a case twenty months after. The patient first noticed a peculiar "swallowing rattle" in her throat, which in several weeks after was followed by difficulty in swallowing foods, the sensation being as of pressure back of the lower portion of the sternum. There was invariably, after a short period, vomiting of from two-thirds to the whole of ingesta. All palliative measures failed to relieve. On operation, by means of a medium epigastric incision, the stomach was found lying in an absolutely transverse position and contracted so that it was less in diameter than the large intestine. The finger could not be introduced through the contracted cardiac opening. The lower end of the œsophagus formed a large pouch. The contracted opening was stretched with the fingers, passed in through an incision in the long axis of the organ. This opening was closed by three rows of sutures, the first and second being continuous chain stitch and the third Lembert. The patient made an excellent recovery.

Valvular Heart Disease.—Crawford, in a valuable paper (*Practitioner,* Nov., '05), declares that so long as compensation is maintained in mitral insufficiency treatment consists in a quiet, well-regulated life, with only such restrictions as are applicable to all forms of valvular disease. Too much rest in heart disease leads to obesity, by means of which another burden may be laid upon this organ, further weakening it. Modified diet should not be depended upon alone to correct this; the best results will be obtained from a mixed diet, restricted in amount and without alcohol. With incipient failing compensation, specific cardiac tonics should not be employed; it is likely that at this period irritability needs treatment rather than weakness. Bromide of ammonium, with arsenic are then appropriate. Diet should be regulated so as to avoid dyspepsia; there should be no cardiac irritants, such as tea, coffee and alcohol. Tobacco should be restricted. The bowels must receive attention. Mental tranquility must be insured. Digitalis is indicated when the feeble and irregular heart becomes manifest. This drug helps to unload the veins and thus enables systole to act at a greater mechanical advantage. The arteries fill better and the amount of mitral reflux is diminished. Digitalis should be given circumspectly when there is high pressure, or when the arterial walls are degenerate. If given at all it should be combined with a nasodilator, such as liquor trinitrini; or it may be replaced by strophanthus. In these circumstances digitalis should be given up as soon as its good effects are fully established.

When there is complete cardiac failure with general anasarca, digatalis is useless and often harmful until some effective measures have been adopted to relieve the venous stagnation. Rest in bed, combined with free purgation, and milk diet for its diuretic effect, may suffice to clear the way for the action of digitalis; in extreme cases, however, neither purgatives nor diuretics will avail. Preliminary vivisection, with removal of six to eight ounces of blood, should be ideal treatment; but this is generally objected to. If it cannot be done the patient should be made to sit up so that as much fluid as possible may gravitate to the feet, to be liberated by linear scarifications on the dorsum of the feet, and deep enough to reach the subcutaneous lymph spaces, care being taken not to draw blood. [The sitting posture may result in collapse; an enormous amount of fluid may be abstracted by sterilized needle pricks along the dependent portions of the trunk and lower extremities, while the patient lies on his back.] Before scarification surgical cleanliness of the skin must be assured and wrappings of boracic lint, wrung out in hot water, and surrounded by absorbent wool, must receive the drainage. As the fluid is drained away the urine increases and digitalis is appropriate to restore the failing vigor of the heart. This drug may be reinforced by caffeine, which is powerfully diuretic; or the old formula—digitalis leaves, blue pill and squill—may be tried. A simple mixed diet may now replace the milk; soups and meat extracts are not appropriate. They take the form in which nitrogen should leave the body and not enter it; the diet should moreover be relatively dry.

Massage acts on the skeletal muscles as does digitalis upon the myocardium—it helps mechanically to

empty the overloaded veins and at the same time flushes the ill-filled arterioles. Massage sets in action the peripheral heart, and should be tried when the œdema has been dissipated; the systematized exercises of Schott and Ling and the Zander Institutes should be employed. The opening up of a multitude of fresh vascular channels will generally give much relief to an overburdened heart. Baths, such as at Nauheim, should do good in mitral regurgitation with failing compensation. Extravagant and unsubstantiated claims have been made for these baths; but they have certainly been effective in some instances. Crawford, in his own personal experience, vouches for some initial slowing of the heart, possibly by reason of reflex stimulation of the cardioinhibitory center from the cutaneous nerve endings by the action of carbonic acid gas. Later there sets in an abiding dilitation of the cutaneous capillaries with disappearance of the initial slowing of the heart. One must not forget the stimulation of the nervous system and the deepening of respiration which an ordinary bath gives.

Parathyroids are related to Paralysis Agitans in the opinion of Berkeley, expressed in an able paper (*Med. News,* Dec. 2, '05). Atrophy or insufficiency of these glands is perhaps the cause of the latter affection. He administered a physiologically tested gland in eleven cases, in all grades of severity; in every case a definite increase in mental energy and comfort was experienced during the treatment. The product should be tested physiologically before administration, and should be kept on ice till used. The initial dose of the powdered gland is 1-20 grain from two to four times a day in a capsule; larger doses appear to produce weakness, constipation, nervousness and even an exaggeration of the symptoms of the disease. Some seventy capsules must be taken before good results are seen.

Neurasthenia is treated by Plecker (*Charlotte Med. Jour.,* Nov., '05), as follows: Absolute rest in bed; no visitors, even no members of the family; forced feeding, fats, cream, milk, eggs, etc.; general massage, paying especial attention to the abdomen if there be constipation; a mild faradic or galvanic current, given at a different time than the massage. In the less severe cases this treatment may be greatly modified; sometimes all that is needed is a rest from the ordinary routine of life. Some patients do well traveling or in a complete change of climate or environment; here over-fatigue is to be avoided and sight-seeing restricted. Treatment must be adjusted for the individual. The nervous should first be soothed by means of bromides. The anæmic should have iron in large doses. A food preparation of malt may be given. Ergot is indicated for cerebral and spinal congestion. Caffein and cannabis indica are useful for sick headaches; zinc preparations for their sedative effects; muriatic acid for digestion. The stomach should often be washed out before breakfast. Blisters and other counter-irritants sometimes give marvelous results, as does also cold water rubbing. (We would emphasize in this treatment the exclusion of visitors, *especially* the patient's immediate relatives; and cold water rubbings. A rough towel soaked in brine greatly helps the "peripheral heart. Cannabis indica is a dangerous drug for neurasthenia, unless the physician can govern the dosage. Such patients are apt almost to eat this drug, with sometimes disastrous results).

Chalazion, or tarsal cyst, is due to a blockage and swelling of the Meibomian glands, which are situated in the tarsal cartilage; the overlying skin is freely movable over it and the conjunctiva covering the tumor is reddened and protruding. When small, absorption may be attempted by the use of Pagenstecker's ointment (℞ Hydrarg. Oxid. Flav. gr. iv., petrolati ʒ ss. M). When inflamed and pointing the little abscess can be incised after eversion from the conjunctival surface upon instilling a 4 per cent. solution of cocaine or a 1 per cent. solution of stovarine. The contents of the tumor must be expressed and well scraped out with a suitable scoop; as this is sometimes very painful, a few grains of powdered cocaine can be introduced into the cavity. The scraping is necessary, otherwise unsightly granulations may appear, or the whole abscess cavity reform, necessitating a second operation. There will be some swelling a few days after the operation, due to effusion of blood in the cavity. When conjunctivitis or corneal ulcers are present the operation had best be postponed until they are cured.

Without mosquitoes no yellow fever is the excellent and probably correct thesis of Carroll (*Am. Med.,* Mch. 17, '06). The parasite of this disease belongs to the animal kingdom, for the following reasons: It is absolutely necessary for its continued existence that it pass alternately through man and the mosquito; its parasitic existence in these hosts is obligatory. About two weeks must elapse before the contaminated mosquito can infect; this indicates a definite cycle of development in that insect. The limitation of its development cycle to mosquitoes of a single germ and to a life history of bacteria. The effects of climate and temperature upon *stegomyia* and upon the rate of desingle vertebrate conforms to a natural zoologic law and does not agree without present knowledge of the velopment of yellow fever parasite within the body of the insect are exactly the same as the effects of the same conditions upon the anopheles mosquito and the malarial parasite.

Life as lived in New York has been described by statistics in the lay press. We rather imagine that if the reincarnated spirit of some ancient Babylonian were to visit this modern city he would have to admit that things certainly have moved since his time. A child is born among us every six minutes; every seven minutes there is a funeral. Every twenty-eight minutes consumption claims a victim; every fourth person dies of this disease. Accident kills a New Yorker every hour and three-quarters; upon this basis it is 2500 times safer to travel by rail than to remain in the metropolis. Some one drowns every eight hours, some one is burned to death every fourteen hours; street-car accidents lead to death every six hours. The yearly number of suicides is almost 2000; and poisoning is the favorite method of shuffling off. Suffocation by gas comes next in popularity; shooting is a comparatively rare method. April is the month of suicides, the average being one in eight hours; in winter it is much less. Some one is murdered every other day; and unsuccessful attempts to murder occur every eight hours. Potter's Field claims a tenant every two hours. There is a

marriage every thirteen minutes; one wedding in every forty leads to divorce. Three children are nevertheless born for each wedding, a very good average under these circumstances. An immigrant enters the city every forty seconds; and of all who come from Europe, one out of four remains here. Thus does New York increase nearly three times as fast from immigration as from birth. A house of some sort is erected every fifty-one minutes; $4.65 is expended every second for new buildings. There is a fire every forty-eight minutes, the loss being at a rate of $25 a minute. The city pays the federal government more than $13,000,000 a year for handling its letters. Two hundred and twelve letters are written in a minute. Some one is arrested every three minutes; and a "drunk" is "pulled in" every ten minutes. The Tombs engulfs a new prisoner every two hours; and one is sent to the state's prison every five hours. A new suit is entered every ten minutes; one is brought to trial every fifteen seconds; to manage these affairs a new lawyer is made every twelve hours. Trains arrive somewhat more frequently than one a minute; and a vessel leaves the harbor every hour.

The secret of the popularity of patent medicines has, it seems, just been learned by the English. *The Pall Mall Gazette* has reviewed a recent report of the Canadian Inland Revenue Department, which shows that the quantity of alcohol in some of these medicines—40 per cent. proof spirit—is much higher than that of the strongest port wine. "They are, in fact, not medicines, but intoxicating drinks." The Massachusetts State Board of Health has supplied us with such information as this several years ago.

Professor Curie, who was accidentally killed in Paris, made epochal contributions to the history of science. He and his good wife—neither would admit with whom the chief credit lay—together discovered the element radium, which played for a time great havoc with the well-established principle of the conservation of energy and with the atonic theory. The old term atom has had to be defined anew; and other terms (such as are set forth on p. 159 of the May issue of THE MEDICAL TIMES) have had to be invented. Professor and Madame Curie had by no means completed their investigation of the possibility of radium; and it has been well observed that his death "may be an event of greater actual importance to humanity than the horrors of earthquake and fire."

Old horse-cars for consumptives are described by our esteemed but somewhat belated contemporary, London Hospital. It was the genius and the enterprise of Dr. Peters, of Providence, Rhode Island, which several years ago disclosed the possibilities of superannuated trolley cars for consumptives. Now we find that the idea seems to have traversed the Atlantic. Old horse tramway cars are being utilized to this end in Leith. In a field with a southern exposure, near the Pilton Hospital, four old cars have been stationed, on the tops of which the fixed seats are cleared off and garden chairs placed, ready for the patients to use in salubrious weather.

Angioma of the scalp is a most distressing lesion, and one certainly most disheartening both to the patient and the physician; especially is this so if the lesion be extensive. Krogius has cured a very severe case by means of subcutaneous sutures (*Centralbl. fur. Chir.,* Nov. 9, '05). A curved needle, with the eye in the point, was passed beneath the mass of vessels and brought out through the skin about an inch away, threaded with one end of a heavy silk suture and withdrawn. It was then reinserted in the same spot, passed between the skin and the angioma and brought out at the same opening as before, threaded with the other end of the suture and withdrawn. A second suture was passed in the same way, the last hole of the first suture serving as the first opening of the second, this being continued around the entire proximal edge of the growth. All the ligatures were tied together.

Man can in future be made to order is the pertinent and comfortable reflection which *The Pacific Medical Journal* makes concerning the following statement of Prof. Oswald in a recent lecture at Columbia University: "Science is young. Some of the greatest of chemistry branches are not more than twenty years old. We cannot explain fully the fact of life, but I should not be surprised if some kind of artificial organism could be made by scientists which could feed itself and reproduce itself. After all, a living thing is nothing but a system of energy, and life is but a matter of chemistry." We sincerely hope Prof. Oswald's anticipations will not be realized in our times. In the ordinary intercourse of life we come upon odd enough specimens as it is, without desiring to put up with creations of the Frankenstein type.

The deadly clothes-brush is now receiving the consideration of the sanitarian. The *Lancet* finds that the brushing of dusty cloths in living-rooms is opposed to cleanly sentiment, apart from the bacterial danger to health inherent in this process. The clothes brush can easily be made a vehicle for the dissimination of disease. Dust is an enemy of the race, and should be prevented wherever possible. The clothes-brush is indispensable; it should be used in a manner as far as possible consistent with hygienic requirements. There should be a special room in every household relegated to this method of purification. Clothing may harbor the seeds of a common cold or a sore throat, or even streptocci and tetanus bacilli. Some kind of a vacuum brushing should be, and will no doubt soon be feasible.

Marriage, states *American Medicine,* is an institution highly conducive to the health of both husband and wife. Among married men over 20 and women over 40 the mortality rate is far less than among the single. Among the widowed and divorced the mortality is exceptionally great. Suicides are much more numerous among the unmarried than among the married. Every form of temperance is promoted by the marriage tie. The probable duration of life of a Benedict of 30 exceeds that of his unmarried brother by five years; and the wife may expect to live one year longer than a single woman of the same age.

The test-breakfast, declares Boas (*Brit. Med. Jour.,* Jan. 6. '06) should be given only in the early morning and upon an empty stomach, to insure which the stomach tube should be previously used. One roll of white bread, of about 35 grammes weight, and 400 grammes of water, or of tea without milk and sugar, are ingested. After an hour the contents or regained by the tube and examined. This simple procedure should be followed precisely. Einhorn, in his valuable work on diseases of the stomach, details the method of examination.

MISCELLANY

Servian student statistics show that men in that country are dropping medicine, while women are turning to this profession for a livelihood.

Books for the blind made of thin aluminum sheets instead of paper, and embossed in the usual manner, are being published by an Edinburgh company.

The Willard Parker Hospital, in New York City, has been remodeled, and the new laboratory building, one of the best equipped in the country, has been formally opened.

Malignant disease is responsible for most sudden, unexpected hemorrhages from the urethra, but there are cases of genito-urinary tuberculosis which may manifest this symptom.

A hospital conference has been organized in New York City for the purpose of preventing extravagance and waste in hospital maintenance; such an exchange of opinion should result in large hospital economies.

The Walter Reed United States Army General Hospital, to be erected in the District of Columbia, is to be named in honor of the great physician who demonstrated the transmission of yellow fever by mosquitoes.

Hodgkins' Disease is diagnosed with certainty only by the removal and microscopic study of a diseased gland. Some cases are characterized by a typically relapsing fever. Glandular tuberculosis, declares Ruffin (*American Jour. Med. Sc.*, April, '06), may be excluded by the tuberculin test.

Cigarette smoking is to be suppressed by act of Parliament among English children under sixteen; any such child found smoking any kind of tobacco is to be held liable to conviction and punishment. In one of our middle-western states no one, adult or child, may smoke a cigarette, under penalty of the law.

A curious vaccination accident is related by *Jour. A. M. A.* An English physician, about to vaccinate an infant, was struck in the eye by a minute fragment of glass from the breaking of a vaccine tube. Though he washed his eye at once, the virus "took" and he had a vaccine pustule, presumably on the conjunctiva; his eyesight has fortunately not been affected.

The taste for alcoholic drinks, states Dr. Wilson, the junior surgeon on the *Discovery* during Captain Clark's Antarctic expedition, dropped suddenly when he and his colleagues entered the ice region, and the disinclination increased as time went on. It seems, moreover, that those who, while in the Arctic regions persist in the use of alcohol do not withstand privation nearly as well as those who are abstinent in this regard.

The physician, Dr. Charles H. Lewis well observes (*Jour. Mich. State Med.*), is besides his functions to treat the sick, a natural philosopher or scientist. His title is derived from physics, the synonym of natural philosophy. And by the title of doctor he is also teacher. In his dual capacity the administration of remedies falls far short of measuring the field of his activities. His advice and counsel are often the most needed and most useful part of his service, and it is his duty to dispense knowledge as well as medicine.

The theatre doctor seems to be quite an institution in Paris, where he is called the "Medecin de service." A seat is reserved for him on the aisle, near the first row, his name is inscribed on a list, and he takes his turn to be present in case of accident or sickness either in the auditorium or on the stage. It is related that a physician played truant one evening, giving his seat to a lay friend; on this occasion, an actress becoming ill, the latter was summoned. Not wishing to embarrass the absentee he treated the case as best he could, prescribing "aqua destillata." The lady fortunately recovered.

Oysters, when removed from saline to fresh waters, states Dr. W. K. Brooks, of Johns Hopkins, absorb water quickly and become "fat"; but the fatness is nothing but water. The fattening is usually carried on in the mouths of rivers, which are always near towns and are polluted by sewage. "Fattened" oysters should not be eaten raw; to such oysters have the outbreaks of typhoid due to the bivalve been traced. All the fresh water that a "fattened" oyster has absorbed is at once abstracted by cooking. Those who consume such oysters are really drinking filthy water from the harbors of cities at the price of good oysters.

Thirty-three colored physicians were recently graduated from the Leonard School of Shaw University, at Raleigh, N. C.; the ten professors in this excellent institution are prominent white physicians. The course of study extends over four years. Besides Leonard there are schools devoted to the same purpose in Washington, Knoxville, Nashville and New Orleans; and these and similar institutions have graduated some fifteen hundred colored men now practicing in the United States. There were also thirteen graduates in Pharmacy from Shaw University. In many Southern cities there are first-class drug stores owned and operated entirely by colored men.

"Case" and "Patient" are terms well differentiated by the *Milwaukee Medical Journal.* We speak of a beautiful case of smallpox or of typhoid, examining all its manifestations with the keen enjoyment of a botanist studying a new plant. The patient does not enjoy these manifestations at all. He demands attention, his sufferings are very real to him, and he does not appreciate the privilege of being the medium for the bacterium growth in which we are so much interested. It may be that while one physician is absorbed in the scientific aspects of the case, another having less of scientific attainments and more of humanity, will give the patient what he most needs —sympathy, courage and relief.

A "nurses' kindergarten" has recently been opened in connection with the Bellevue Training School in New York City. This, and the Probationers' Home at Johns Hopkins are the only institutions of their kind in the country. Only the elements of a nurse's profession are taught, such as cooking, the care of the sick and the feeding of patients. In the primary school in New York there are now eighteen probationers, averaging in age 27 years. The object of its founders was to relieve the Training School of its primary classes, and to provide room for a larger number of those who had made a preparatory study of nursing. The Bellevue Training School has always received more applicants than it could accommodate.

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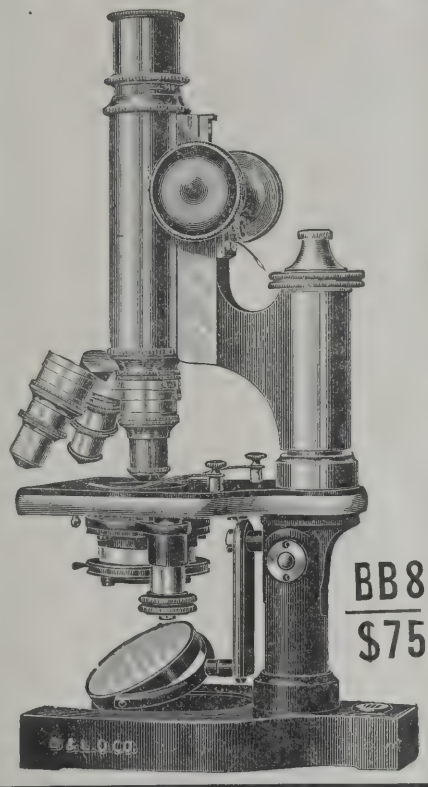

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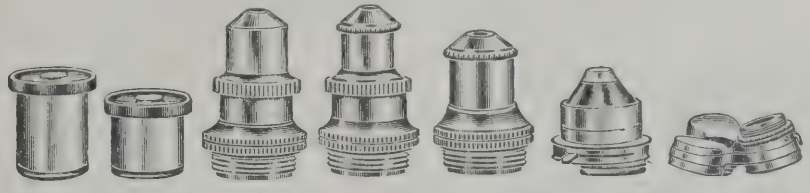

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SELECTIONS

Advertising Rates vs. Postage.—Last year, one of our well-known medical publishers issued a card to advertisers bearing a picture of an overturned waste-basket, containing unopened advertisements, postal cards and various green-stamped literature. Beneath the picture was the pertinent query: "What amount of money do you contribute to the waste-basket fund each year?" Prospective advertisers should realize that every busy man's waste basket might pose for such a photograph. One reason why letter postage remains at two cents an ounce is that commercial and professional men would rather pay the present price in order to save time in consigning third-class mail matter, which is almost entirely composed of advertisements, to the waste basket. Some advertisers realize this to the degree of sealing their envelopes and paying double postage on them. This shows strategic wisdom of the type proverbially—but we understand, libelously—ascribed to the ostrich. Apparently, they think that it is the other man's advertisement that we object to, or that it is the color of the one-cent stamp that arouses our antipathy, or, perhaps, advertisers to the medical profession assume that we are afraid of the bacteria that may enter an open envelope. Other advertisers employ the mimeograph instead of the printing press or hire a Mamie girl at $5 a week to copy a set form of letter, with the idea of giving the impression of a personal communication. All such expedients, as well as the general use of the mail to convey advertisements show that the advertiser fails to realize the gist of the whole matter. The advertisement is all right in itself, but the man whose time is occupied objects to any method which solicits him to buy when he does not want the article in question. The mail advertisement stands on exactly the same plane as the peddler. If it comes honestly, as an advertisement, it is consigned to the waste basket, just as the peddler is turned away at the door. If by virtue of a two-cent stamp, or a more or less skillful imitation of a bona fide letter, it gets past the waste basket, it is liable to receive the same kind of treatment as the peddler who gets past the door by representing himself as a patient or business acquaintance. When we get to know the advertiser by his methods, he has placed himself in exactly the same light as the peddler whom we have entertained once or twice on the strength of his misrepresentation. If the advertiser will place himself in the position of the man whom he wants to reach, he will readily appreciate the fact that most of what he pays for circulars and postage is in the nature of charity or a voluntary contribution to the government. When he himself wants to go to the theatre, he relies upon the daily paper rather than upon the bill boards and sandwich men for information. If he wants handkerchiefs or gloves or shoes, he goes to some store whose name he sees day after day in the paper, not to one with a calico sign of a bankrupt sale nor to one whose dodger has been thrust upon him by a grimy handed urchin on the street. At least half of the cent or two cents paid for a newspaper and of the dime or quarter paid for a literary magazine, goes for advertisements and, in a surprising number of instances, the paper is bought for some advertisement, while it often happens—at least in our own experience—that the advertising pages of the magazine are more interesting than the stories and essays and the illustrations of better quality than those that accompany the reading matter. Moreover, it is only on account of the advertisements that any kind of periodical literature can be sold to at its present price. It is a simple matter to estimate the cost of advertising by postal card at about one and a half cents, by unsealed envelope at about two cents, and by sealed envelope at about two and a half cents each. Advertising in medical journals costs about the same, allowing for their circulation. Obviously, by using thin paper, more bulky advertisements can be sent by mail for a given cost than by the medium of journals but, as in any kind of communication, bulk is an objection, if it passes the point of minimum necessity. Just what proportion of advertising circulars are read, we have no means of knowing. It is safe to say, however, that they practically never reach the busy man who is, ultimately, the best customer. If not read when received, they are rarely read at all. On the other hand, most physicians do read the advertising pages of medical journals once or twice a year, pretty thoroughly, in the search for improved apparatus and medical appliances, and the physician who is anticipating a purchase, or who is seeking information commonly carried in the advertising pages, naturally turns to his file of journals. Our readers may ask why we have given space to what might seem to be a purely business matter, of selfish interest. First of all, because we are not simply a journalist, but a physician, to

The Key

to the only sane medical treatment of all those forms of dyspepsia associated with a deficient gastric juice and an enfeebled gastro-intestinal musculature is found in such remedies as tend, by their stimulative action on the digestive glands and muscles, to re-establish their normal physiological activity.

Colden's Liquid Beef Tonic exerts a specific action on the entire digestive tract. It restores the appetite, increases the quantity and quality of the gastric juice, and normalizes the motility of the gastro-intestinal muscles. Write for sample and literature. Sold by all druggists.

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DOSES: 2 to 6 Pills a day, or
1 to 3 tablespoonfuls after meals.

SAMPLE OFFER: One original bottle of 50 **Blancard's Pills** will be sent free to practitioners, unacquainted with their merits, upon receipt of professional card.

Address: **GEO. J. WALLAU 2 Stone St., N. Y. City**

whom the trouble and loss of time occasioned by mail advertisements, is an appreciable tax. Secondly, because every reader, not only of this journal, but of every other, is pretty directly benefited by every advertisement published in the legitimate channels. Thirdly, because advertising in periodicals is susceptible of control to insure the reliability and excellence both of the produce and of the firm. Fourthly, because, in the long run, the advertiser who furnishes a good article at a reasonable price and who has a regard for the ultimate welfare of the medical profession, also is benefited by the more convenient and more economic method of journal advertising, and we want our readers to assist in impressing this fact both upon those who, by already carrying such advertisements, are enabling medical journals to reach a higher standard of excellence and, per contra, upon those who are shirking their share of responsibility and making a nuisance of themselves by overloading the mails with third-class matter.

The Solubility of "Alkaloidal" Granules. I noticed in a recent journal that some doctor makes an objection to the granules of the active principles on the basis of their alleged insolubility or slowness of solution in water. Now, I want to say to that brother that either he does not use Abbott's "Alkaloidal" granules or, if he does, he is not using them properly. I use them extensively, and have for years, and can truthfully say I have my first granule yet to find that is not soluble in water, and will state further that they make a perfect solution. I often even use them hypodermically, and we all know that anything insoluble cannot be used with any degree of satisfaction or safety that way—of course, I refer to those containing drugs that are soluble in water. Allow me to say, in defense of the "Alkaloidal" granules, of which I have on hand almost their entire list, that I find them of uniform strength and that they always give me excellent satisfaction. Like many good things, Abbott's "Alkaloidal" granules are imitated, and with the usual result, that all imitations are decidedly inferior. Dr. Abbott has done a great work for the medical profession, and should have their unqualified support. No unprejudiced physician can reasonably object to his goods or his methods; and those who do for us unstintingly, as he does, should be protected from piracy by our patronage, as far as possible. So much in defense of Abbott's "Alkaloidal" granules, and in the interests of fair play.—Dr. P. M. Howkins, Kraig, Texas.

The Scrapheap. Our materia medica is clogged by worn out, obsolete drugs that should have been long since relegated to the scrap heap. Take a look at your drugs, Doctor. Are you still using those old tinctures and extracts? Same old ones you made "way back in 89"? Same old prescriptions? Nasty, abominable in taste, uncertain and constantly deteriorating in quality, held in deserved contempt by the progressive part of the profession. You must be an awfully good man and your patients must love you dearly and must be willing to sacrifice for you, else they would have left you long ago. This is no world for dreamers or mossbacks. To keep up with the twentieth-century procession a man must be alert, ready, keen to see and quick to act, to seize upon all new improvements affecting his work.—*American Journal of Clinical Medicine.*

Mr. B. B. Hamlin, Jr., President and General Manager of The Hydrox Chemical Company, has accepted the management of the Medical Dioxide Company, and the business of both enterprises will be conducted in the "Seabury Building" at No. 59-61 Maiden Lane, New York.

To operate and find that a suspected osteomyelitis is actually an acute rheumatism (Int. Jour. of Surg.) is far preferable to deferring operation until an exact diagnosis can be made.

Clinton Cascara Active

Does not Gripe

The most Active palatable Cascara

SURE AND SAFE LAXATIVE
FOR BOTH CHILDREN AND ADULTS
AFFORDS PERMANENT RELIEF IN
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Methods employed render these addictions the most certainly and readily curable of all the chronic ailments.

Address the Retreat most convenient to you.

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Gluten Grits AND **BARLEY CRYSTALS,**

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For MILD MENTAL and NERVOUS DISEASES

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announces his removal to his new Sanitarium, 110 West 81st St., New York, where he will continue his specialties, TREATMENT OF WOMEN, OPERATIVE GYNECOLOGY, OBSTETRICS, ELECTRO THERAPEUTICS, ALCOHOLISM and general medical and surgical practice Delicacies for invalids. Special accommodation for Lying-in patients. Member of the Alumni Society of the Lying-in Hospital. Hours: 11 to 1 and 7 to 7:30 P.M.

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Write for free samples.

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The gradual disappearance of the casts, albumen and dropsy and increasing specific gravity, is the eloquent response of Chronic Nephritis to Triosine. It arrests degeneration in renal tissues and is the first successful treatment in chronic forms It contains no narcotics or sedatives, but is diuretic and purely eliminative. The fact that paracentesis has been required does not prevent recovery, Write for brochure outlining the first and only successful treatment for Chronic Nephritis to

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Brochure outlining treatment around each bottle. Brochures also mailed on request.

SELECTIONS

American Medicine Becomes a Monthly Journal. We note with approval that American Medicine, conducted since its origin as a weekly, has just issued its first number as a monthly. Medical topics are rarely of an emergent nature as regards publication and daily medical journals, though several times started, have never proved successful. The news of meetings, of societies, examining boards, etc., justifies the existence of weekly journals, but, so far as the main object of medical journalism is concerned—the publication of scientific and clinical articles—the opportunity for more careful editorial reviewing, proof-reading, etc., is more important than the hasty presentation even of a novel subject. Even if the publication is satisfactorily done, we are inclined to believe that the majority of readers are unduly fatigued by weekly journals and receive more value from the more convenient aggregations of medical literature into monthly periodicals.

THE THERAPEUTIC RECORD

A Modern Medical Monthly Devoted to Treatment of Disease.

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It contains short practical articles on treatment by experienced and able physicians. No clippings or stale matter appears in its columns. It contains each month letters from London, Paris and New York, in which are concise accounts of all the advances in therapeutics. Besides this, each issue is filled with matter that is original and of great practical value to all physicians.

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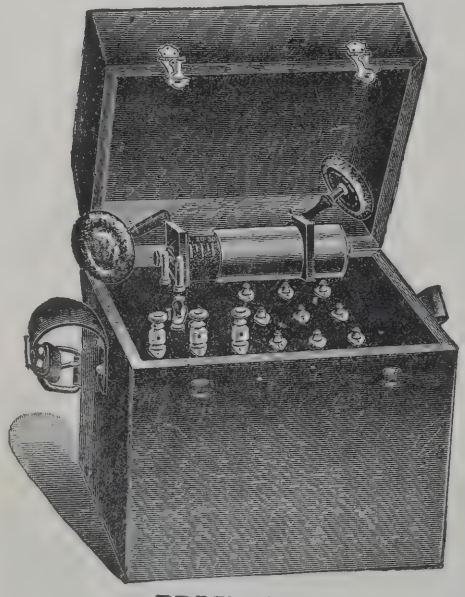

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This machine will be appreciated by Physicians who object to dry cell galvanic and combined batteries because the cells are usually small, do not last long enough, and are hard to procure. Our combined Battery No 1 is equipped with 9 large dry cells which are less troublesome, cleaner, and will give as good service as wet cells. The Battery is so constructed that **Cells of Any Standard Make Can Be Used in Same.**

Three Batteries Combined in One.

A first class faradic coil with long, fine wire secondary, strong enough for any work, operated by large dry cell.

Eight large cells for galvanic work, such as removing facial blemishes, treating strictures, cataphoresis, etc.

A diagnostic lamp for examining throat or other cavities.

The attachments furnished with this Battery, without extra charge, are: 2 sponge electrodes, pair extra long silk-covered conducting cords, a bifurcated cord, aluminum foot plate, needle holder, needles, epilation forceps, diagnostic lamp and cords for same, and a copy of the little book 'Suggestions and Directions for Treating Disease with Faradic Currents of Electricity."

SPECIAL OFFER.

To introduce this Battery we will, for a limited time, allow physicians a Discount of 20 per cent., thus making net cost only $16, and in addition to the attachments mentioned above, we will send an urethral electrode, four bulbs or olives, uterine cup and rectal ball.

Electrolysis is the cleanest, surest and most scientific method of treating stricture of the male urethra.

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Sent for Free Inspection Physicians who prefer to see the battery before paying for it, can have it sent to them C. O. D. $16, with privilege of examination. All express charges will be prepaid, and if it does not suit it will be returned at our expense.

Our Catalog No. 25, which describes all our Faradic and Galvanic Batteries and Electrically Lighted Instruments, will be sent free on application.

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12 acres of ground; 200 shade trees (30 varieties); 25 rods on west bank of Rock River; 1 mile south of Post Office at 2007 S. Main Street.

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Summer Therapy

is largely synonymous with the treatment of stomach and intestinal disorders.

Elixir Maltopepsine

(TILDEN'S)

represents the most potent combination of digestants, forming a powerful remedy for the treatment of every form of indigestion as well as an elegant vehicle for any drug indicated in these disorders.

Respirazone

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is another prescription to which we invite the especial attention of the medical profession at this time, as ASTHMA and HAY FEVER are also troubles which the advent of spring and summer carry in their wake more than any other season. RESPIRAZONE has proven itself the most reliable remedy for these conditions and for all catarrhal and spasmodic respiratory disorders, such as acute bronchitis, laryngitis, whooping cough, spasmodic and catarrhal croup.

Samples and literature to the profession on application.

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NEW LEBANON, N. Y. ST. LOUIS, MO.

In Your Cases of Bright's and Other Disturbances

Of the Kidney you should use

NEPHRITIN

The primary substances of the cells of the cortex and the convoluted tubules of the kidney.

These primary substances in the shape of macerated kidney have been used for three years in the hospitals of France with remarkable results.

Page and Dardelin, in the Press Medicale, report 18 cases, and say that the results have been so remarkable that they do not hesitate to proclaim that it is the most certain and most powerful weapon at our disposal in fighting Nephritis.

Chaupin, in Revue De Medecine, "very energetic, diuretic action, edema and congestion vanishing and arterial hypertension subsiding."

Renault, in Gazette des Hopitaux, "most efficacious and active medicament yet proposed, causes Albumin to disappear, does no harm to diseased kidneys."

NEPHRITIN is fifty times as potent as the maceration.

NEPHRITIN is dispensed only in 5 grain tablets.

LITERATURE AND SAMPLES UPON REQUEST.

REED & CARNRICK, 42-44-46 Germania Avenue,

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SELECTIONS

Stovaine as a spinal and local anæsthetic is highly praised by Chiene (*Lancet,* Jan. 27, '06), who recognizes the dangers and inconveniences of general anæsthesia. Bier first tried spinal injection, using cocaine, which had, however, dangerous after effects. In 1904 Fourneau produced stovaine (hydrochlorate of amyleine), which when injected slows the pulse, causes mydriasis and flushing; pallor, dyspnœa, oppression, nausea and excitement are not induced by this product, which is much less toxic than cocaine, and can, therefore, be given in larger doses. As after results there may be a slight rise of temperature for several days; there is rarely headache and spinal neuralgia. Declus, as a result of nine months' use of stovaine as a local anæsthetic, stated that he used it in double the strength of cocaine. Chaput has done laparotomies under spinal stovaine anæsthesia, in 100 cases, 45 operations were performed on the legs (fractures and dislocations), 28 on the perineum, 29 on the abdomen (hernias, hysterectomies, appendectomies and ovariotomies). Failures occurred only when small doses were given. From 4 to 8 centigrammes are injected; the drug should not be employed on patients over 65. Chiene has combined hemisine with stovaine. He uses Tuffier's 10 per cent. solution of the latter in sodium chloride solution, such as is supplied in ampoules. After injection into the spinal canal a sensation of pins and needles was felt in the legs; in seven minutes the patient could not lift the limbs. Sensation to pain was then lost, though that to touch remained. Anæsthesia commenced in the perineal region, then affected the toes and feet and passed gradually up the limb. Chiene has done under stovaine inguinal hernias, transplantation of tendons, removal of tuberculous glands in the groin, severe traumatic flat foot, hæmorrhoids, varicose ulcers, etc. Gangrene of the skin at the site of the injection has not occurred in his experience, possibly because he has used the combination referred to.

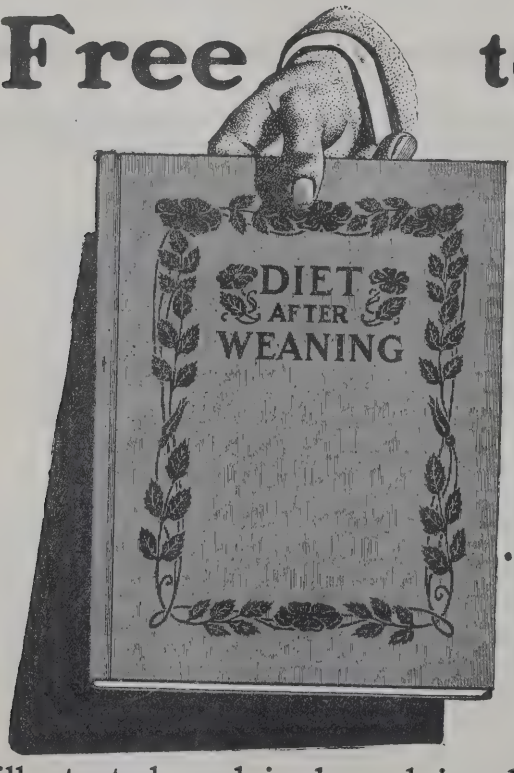
Coakley (*Med. News,* April 15, '05) finds that stovaine as a local anæsthetic is apparently equal to cocaine, the time required being the same. It does not contract the nasal mucous membranes nor does it cause a sense of constriction in the pharynx as much as cocaine does. This is a disadvantage when the passages should be widely opened for inspection; but it is an advantage in not too greatly shrinking redundant tissue which must be removed. Solutions of stovaine have a fishy odor annoying to some patients; and they are more bitter than cocaine solutions. Coakley agrees with Chiene regarding the absence of toxic effects with stovaine.

Mr. Marchand is greatly exercised because of the discredit thrown upon his Glycozone by the profusely advertised to the public "Liquozone." We are confident our readers are fully aware of the difference, and we want to urge them to make this known to their patients, so that they may not be deceived. These preparations are not at all alike in any respect, and should not be confounded!

The possibility of urethral stricture in young children suffering from urinary disturbances (Int. Jour. of Surg.)—frequent micturition, vesical tenesmus, retention of urine, etc.—should always be considered even in the absence of a traumatic cause or gonorrheal affection. Internal urethrotomy followed by systematic dilatation is as successful in these cases as in older persons.

In septic conditions of uncertain origin (Int. Jour. of Surg.) the presence of localized pain will sometimes afford a clue to the portal of infection.

Free to Physicians



A New Book,

Diet after Weaning

We have issued this book in response to a constantly increasing demand for suggestions on the feeding and care of the child between the ages of one and two years.

We believe you will find it a useful book to put in the hands of the young mother.

The book is handsomely printed, fully illustrated and is bound in cloth. We shall be glad to furnish you copies for your patients entirely free.

A **postal card** with your name and address on it will bring you a copy by return mail.

MELLIN'S FOOD COMPANY, BOSTON, MASS.

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ASSIMILABLE IRON

THE medical profession is in need of a blood reconstructive that contains every element of a perfect nutriment and a true assimilable iron. In Bovinine we have such a reconstructive that will supply every deficiency in the blood of anaemic patients in adequate quantity and quality and one that will stimulate assimilation and elimination, and will nourish without imposing a severe tax on the gastro-intestinal tract.

BOVININE

is a thoroughly sterile preparation requiring little or no digestion and producing blood corpuscles that reach healthy maturity. Herein lies its great superiority over all other preparations of organic iron, tonics, or incomplete foods.

Bovinine Is Scientifically Prepared.
Bovinine's Formula Is Published.
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THE BOVININE COMPANY

75 WEST HOUSTON STREET, NEW YORK CITY

4

PETROGEN—WYETH

A MODIFIED MINERAL OIL, PERFECTLY BLAND AND NON-IRRITATING TO INFLAMED SURFACES

THE various MEDICATED-PETROGEN combinations, in addition to producing the usual local effects of the particular drug, are immediately carried by this rapidly penetrating vehicle through the integument and mucous surface into the general circulation, exerting the full constitutional properties of the medicament without the danger of gastric irritation which usually follows its use by the mouth.

Iodine and other drugs, when combined with this bland vehicle, may be rubbed on with the hand or massaged once or twice daily for a period of several weeks. This is not possible with the Tincture of Iodine, as several applications result in such extensive irritation that its further local use is seldom permissible. Clinical experience will substantiate our claim with reference to this new product, and we shall be glad, upon application, to supply samples to physicians for their personal demonstration.

PETROGEN COMBINATIONS

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SELECTIONS

The approach of the national holiday, July 4th, suggests to the surgeon the necessity of preparing to handle cases of cannon-cracker wounds and other injuries caused by the explosion of fireworks. Many of these, in the nature of things, will be infected with the bacillus of tetanus or its spores, and will require the most scientific treatment to save life. It is necessary only to review the files of this and other leading medical journals to gather a fair estimate of the enormous sacrifice of life that this country makes every year in celebration of Independence Day, and it behooves every medical practitioner to be prepared to receive and treat each case that presents itself with the best means at his command.

Without repeating the statistical facts that have been cited again and again in support of the prophylactic use of antitetanic serum, it is only necessary to say that these facts conclusively prove the value of the serum as a preventive of tetanus. It is injected in a single dose of 10 c. c. immediately after receipt of the injury, and should be repeated ten days later. The wound is to be thoroughly cleansed, avoiding the use of strong solutions or agents that coagulates the albumens, and packed with gauze well charged with antitetanic dusting powder. Antitetanic dusting powder is antitetanic serum dried and powdered and mixed with a suitable quantity of chloretone. It is recommended by reliable and experienced medical practitioners as a dressing for the wound in all cases in which tetanic infection is suspected. It is practically odorless and keeps well.

Antitetanic serum and antitetanic dusting powder are supplied by Messrs. Parke, Davis & Co., and may be obtained through all druggists.

In injuries to the elbow joint (Int. Jour. of Surg.) the rapid development of marked swelling frequently prevents the diagnosis of a suspected fracture or dislocation. Under these circumstances the plan suggested by Gerster and described by Dawbarn will prove of value when the x-ray is not available. The patient having been anesthetized, an Esmarch elastic bandage is slowly and firmly applied from the hand up the forearm and over the elbow to the arm-pit. This is left on for about fifteen minutes and then removed from below upward, the final turns upon the upper arm being allowed to remain. The removal of the edema in this manner permits of the recognition of a fracture or dislocation, and this having been accomplished, the upper turns of the bandage are removed.

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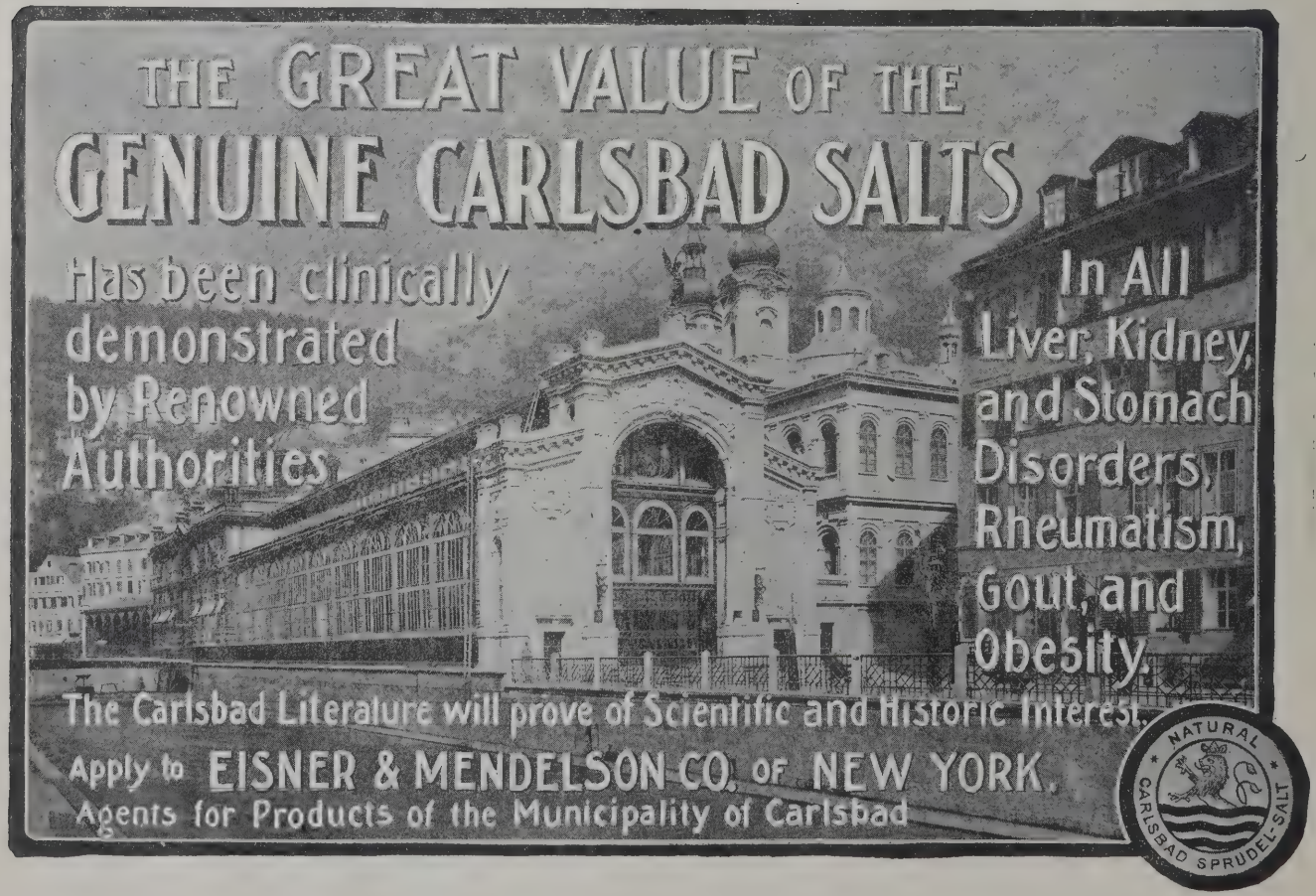
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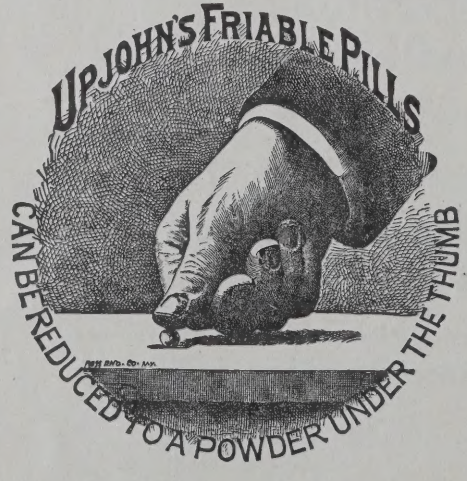

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